

ATTACHMENT F

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles**

FACT SHEET

**WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF BURBANK
(BURBANK WATER RECLAMATION PLANT)**

NPDES No. CA0055531
Public Notice No. : R4-2006-049

FACILITY ADDRESS

Burbank Water Reclamation Plant
740 North Lake Street
Burbank, California

FACILITY MAILING ADDRESS

City of Burbank
740 North Lake Street
Burbank, CA 91510-6459
Contact: Rodney Andersen
Telephone: (818) 238-3931

I. Public Participation

1. The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced facility. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

A. Public Comment Period

The staff determinations are tentative. Interested persons are invited to submit written comments on the tentative WDRs for the City of Burbank's (the City or Discharger), Burbank Water Reclamation Plant (Burbank WRP). Comments should be submitted either in person or by mail to:

Executive Officer
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

To be fully responded to by staff and considered by the Regional Board, written comments regarding the revised tentative Order should be received at the Regional Board offices by 5:00 p.m. on October 2, 2006.

B. Public Hearing

The Regional Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: November 9, 2006
Time: 9:00 a.m.
Location: Council Chambers
Metropolitan Water District of Southern California, Board Room
700 N. Alameda Street
Los Angeles, California

Interested persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is www.waterboards.ca.gov/losangeles where you can access the current agenda for changes in dates and locations.

C. Information and Copying

Copies of the tentative WDRs and NPDES permit, report of waste discharge, Fact Sheet, comments received, and other documents relative to this tentative WDRs and permit are available at the Regional Board office. Inspection and/or copying of these documents are by appointment scheduled between 8:00 a.m. and 4:50 p.m., Monday through Friday, excluding holidays. For appointment, please call the Los Angeles Regional Board at (213) 576-6600.

D. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding this NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

E. Waste Discharge Requirements Appeals

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
ATTN: Elizabeth Miller Jennings
P.O. Box 100
Sacramento, CA 95812

II. **PURPOSE OF ORDER**

The City discharges tertiary-treated wastewater, from the Burbank WRP under Order Nos. 98-052 and 96-050, adopted by this Regional Board on June 29, 1998, and July 15, 1996, respectively. Order Nos. 98-052 and 96-050 also serve as a permit under the National Pollutant Discharge Elimination System (NPDES No. CA0055531).

The Discharger's permit was administratively extended beyond the May 10, 2003, expiration date. On September 28, 2001, the City filed an incomplete Report of Waste Discharge (ROWD) and applied to the Regional Water Quality Control Board (Regional Board) for reissuance of waste discharge requirements (WDRs) and a NPDES permit to discharge tertiary-treated wastewater, cooling tower blowdown, boiler blowdown water, stormwater, and demineralizer water. Therefore, the Discharger's permit has been administratively extended until the Regional Board acts on the new WDR and permit. On July 2, 2002, the City submitted a complete ROWD. On August 2005, the Discharger met with Regional Board staff and, through a presentation, provided updated information to assist in the permit renewal process. This WDR and NPDES permit will expire on October 10, 2011.

LITIGATION HISTORY

On December 2, 1998, the City of Burbank filed a petition with the State Board for a stay of Order No. 98-052. The State Board did not grant the City of Burbank's petition for review or its request for a stay.

On December 23, 1999, the City of Burbank filed a Petition for a Writ of Mandate and application for stay challenging their permit (Order No. 98-052) and their Time Schedule Order. On December 29, 1999, the Court issued a stay of the following 31 contested effluent limits contained in Order No. 98-052 for the Burbank WRP: ammonia nitrogen, arsenic, bis(2-ethylhexyl)phthalate, bromodichloromethane, bromoform, cadmium, chloroform, chromium VI, copper, cyanide, 2,4-D, detergents, dibromochloromethane, 1,4-dichlorobenzene, 1,2-dichloroethane, endrin, ethylbenzene, iron, lead, lindane, mercury, methylene chloride, nickel, selenium, silver, 2,4,5-TP (Silvex), tetrachloroethylene, toluene, total phosphates, total residual chlorine, and zinc.

In April 2000, the City of Burbank tried to amend its Petition to Writ of Mandate and the Judicial Stay to expand the list of stayed effluent limits to include the following effluent limitations: acute toxicity, chronic toxicity, coliform, manganese, nitrite + nitrate-N, and turbidity. The City also tried to delete ammonia nitrogen from the list of constituents because it was incorrectly included in the appeal. However, the court denied the City of Burbank's requests to modify the original list of 31 constituents under appeal.

On August 21, 2000, the City of Burbank filed a complaint for declaratory and injunctive relief with the United States District Court, Central District of California, Western Division, *City of Los Angeles, City of Burbank, City of Simi Valley, and County Sanitation Districts of Los Angeles County, by and through their agent County Sanitation District Number 2 of Los Angeles County vs. United States Environmental Protection Agency, and Alexis Strauss, Director, Water Division, United States Environmental Protection Agency, Region IX* [Case No. BS 060 960]. The matter went before the court on August 31 and September 1, 2000.

On November 30, 2000, the Superior Court of the State of California filed its Decision on the Submitted matter [Case No. BS 060 960] and ordered counsel for the petitioner to prepare, serve, and lodge a proposed Statement of Decision, Judgement and Writ, on or before December 14, 2000. Respondents were given until December 28, 2000, to serve and file objections. Respondents filed objections on January 19, 2001, and Petitioners lodged a revised proposed Statement of Decision, Judgement of Writ, and a response to Respondent's objections on February 13, 2001.

On April 4, 2001, the Superior Court of the State of California signed and filed its Statement of Decision, ordering that judgement be entered granting the Petitioners' petition for a Writ of Mandamus, commanding the Respondents to vacate the Contested Effluent Limits, and ordering the adoption of new effluent limits at a new hearing.

In its December 24, 2002, opinion, the Court of Appeal unanimously reversed the trial court decision; and, made the following precedential determinations:

- a. Cost Issues - For existing objectives, water quality-based effluent limitations (WQBELs) must be developed without reference to costs and Clean Water Act (CWA) Section 301(b)(1)(C) does apply to POTWs. (POTWs are not exempt from WQBELs.)
- b. CEQA Requirements – The Environmental Impact Report (EIR) exemption in Section 13389 of the Water Code means that "CEQA imposes no additional procedural or substantive requirements" other than compliance with the CWA and Porter-Cologne Act. (NPDES permits are exempt from CEQA.)
- c. Compliance Schedules - Compliance schedules may be included within a NPDES permit only if the applicable water quality standards permit it. (Compliance schedules must be contained in a Time Schedule Order or similar enforcement document if the Basin Plan does not allow the inclusion of compliance schedules in a NPDES permit.)
- d. Narrative Toxicity - The Regional Board's narrative toxicity objective which was upheld does not violate 40 CFR 131.11(a)(2). (The narrative standard can remain in NPDES permits as an effluent limitation.)

Although the Court of Appeal decided in favor of the State Board on every issue they appealed, the December 24, 2002, decision was not certified for publication at that time.

On August 14, 2003, the Court of Appeal of the State of California, Second Appellate District, Division three, certified its December 24, 2002, opinion for partial publication. The importance of the August 14, 2003, decision is that the outcome of the *City of Burbank v. State Water Resources Control Board* case may now be cited. The City subsequently filed a petition with the California Supreme Court.

On November 19, 2003, the Supreme Court granted the petition for review filed by the Cities of Burbank and Los Angeles. The opening brief on the merits was filed December 19, 2003.

On April 4, 2005, the California Supreme Court issued its decision, affirming the judgement of the Court of Appeal, reinstating the wastewater discharge permits to the extent that the specified numeric limitations on chemical pollutants are necessary to satisfy federal Clean Water Act requirements for treated wastewater.

Ordinarily the Court's decision would become final 30 days after issuance (i.e., it would have become final on May 4, 2005); however, both the water boards and the cities filed petitions for rehearing.

The superior court reviewed the petitions for rehearing and remanded one remaining issue back to the trial court for resolution. The trial court must determine whether or not the permit restrictions are "more stringent" than required by federal law.

On June 28, 2006, the judge signed the statement of decision. The Court found that the following constituents had numeric effluent limitations more stringent than required to meet the federal law existing at the time that the Regional Board adopted the NPDES permit: Bis(2-ethylhexyl)phthalate, Cadmium, Chromium VI, 1,2-dichloroethane, Ethylbenzene, Lead, Selenium, Tetrachloroethylene, Toluene, and Toxaphene.

III. FACILITY AND TREATMENT PROCESS DESCRIPTION

1. The City owns the Burbank WRP and contracts United Water Services to operate the Burbank WRP, a tertiary wastewater treatment plant located at 740 North Lake Street, Burbank, California. Effective June 15, 2000, the street address changed from 2 West Chestnut Street to 740 North Lake Street. The reason for the change is that the Chestnut Street entrance to the plant was vacated and replaced with the Lake Street entrance. The Burbank WRP had a dry weather design capacity of 9.0 million gallons per day (MGD), and only discharged an average of 4.3 MGD from the WRP (the year 2004). However, following the completion of the nitrification/ denitrification (NDN) project and related upgrades, the design capacity will increase to 12 MGD.
2. The Burbank WRP is part of the City of Los Angeles' integrated network of facilities, known as the North Outfall Sewer (NOS), which includes four treatment plants. The upstream treatment plants (Tillman WRP, Glendale WRP, and Burbank WRP) discharge solids to the Hyperion Treatment Plant. This system also allows biosolids, solids, and excess flows to be diverted from the upstream plants to the Hyperion Wastewater Treatment Plant for treatment and disposal. Figure 1 shows the vicinity map for the Burbank WRP.
3. The Burbank WRP serves a population of approximately 100,000 people. Flow to the plant consists of domestic, commercial and industrial wastewater. For fiscal year 2004, industrial wastewater represented only about 10% of the total flow to the plant. Discharges to the collection system from industry include discharges from the following significant industrial user categories: metal finishing (40 CFR Part 433), electroplating (40 CFR Part 413), nonferrous metal forming and metal powder (40 CFR Part 471), plastic molding and forming (40 CFR Part 463), rubber manufacturing (40 CFR Part 428), canned and preserved food processing (40 CFR Part 408), and meat product processing (40 CFR Part 432).

4. The United States Environmental Protection Agency (USEPA) and the Regional Board have classified Burbank WRP as a major discharger. It has a Threat to Water Quality and Complexity Rating of 1-A, pursuant to Section 2200, Title 23, CCR.
5. Pursuant to 40 CFR, Part 403, the Burbank WRP developed, and has been implementing, an industrial wastewater Pretreatment Program, which has been approved by USEPA and the Regional Board.
6. The treatment at the Burbank WRP currently consists of barscreen removal of large solids, primary sedimentation, nitrification/denitrification activated sludge biological treatment, secondary sedimentation with coagulation, single media sand filtration, and chlorination with gaseous chlorine. No facilities are provided for solids processing at the Burbank WRP. Sewage solids separated from the wastewater are returned to the trunk sewer for conveyance to NOS for treatment and disposal. Figure 2 is a schematic of the Burbank WRP wastewater flow.
 - A. *Primary sedimentation.* The main objective of primary sedimentation is to remove solids from the wastewater by gravity. The heavier solids (settleable solids) precipitate out and are scraped out of the primary sedimentation basin. The lighter solids float to the top and are skimmed off. However, some solids remain in suspension.
 - B. *NDN Activated sludge.* The activated sludge process is a treatment system in which the incoming wastewater is mixed with existing biological floc (microorganisms, bugs, or activated sludge) in an aeration basin. Activated sludge converts non-settleable and dissolved organic contaminants into biological floc, which can then be removed from the wastewater with further treatment. The nitrification process converts ammonia nitrogen into nitrate plus nitrite nitrogen (inorganic nitrogen). The denitrification process converts the inorganic nitrogen into gaseous nitrogen, thus removing it from the wastewater.
 - C. *Secondary sedimentation with coagulation.* The main objective of secondary sedimentation is to remove biological floc from the wastewater. Chemicals, such as aluminum sulfate (alum), may be added as part of the treatment process to enhance solids removal. Alum causes the biological floc to combine into larger clumps (coagulate). This makes it easier to remove the floc.
 - D. *Single media sand filtration.* The filtration process is used to remove or reduce suspended or colloidal matter from a liquid stream, by passing the water through a bed of sand material. Filters remove the solids that the secondary sedimentation process did not remove, thus, improving the disinfection efficiency and reliability.
 - E. *Chlorination.* In the past, gaseous chlorine was used as a disinfectant in the Burbank WRP. However, gaseous chlorine was replaced by liquid sodium hypochlorite. Disinfectant is added to the treated effluent to

destroy bacteria, pathogens and viruses.

- F. *Dechlorination.* Prior to discharge, sodium bisulfite is added to the treated effluent to remove residual chlorine.
- G. *Sludge.* No facilities are provided for solids processed at the plant. All sewage solids separated from the wastewater are returned to the trunk sewer for conveyance to the City's North Outfall Sewer (NOS), where treatment and disposal occur, under the Hyperion Wastewater Treatment Plant's NPDES permit, Order No. R4-2005-0020 (NPDES No. CA0109991).

In order to achieve compliance with the ammonia Basin Plan objectives, the City retrofitted the activated sludge treatment units at the Burbank WRP for NDN treatment. The NDN modifications were completed in June 2003.

Following the NDN upgrade, the City observed an improvement in water quality with respect to the nitrogen compound concentrations. Although the NDN improvements were not designed to reduce or remove priority pollutant concentrations, the City has coincidentally observed a reduction in the final effluent concentrations of some priority pollutants.

The City is considering the addition of a flow equalization basin, to regulate the plant's influent flows during peak hours and to run the plant's biological treatment process in a state of equilibrium.

- 7. **Water Recycling Facility.** In 2005, the Discharger recycled 1252.74 acre-feet (409.8 million gallons) of treated effluent from the Burbank WRP [50.3% (438 acre-feet) for irrigation and 49.7% (622.34 acre-feet) for cooling water supply] and discharged an average of 5.8 MGD from the Burbank WRP to Burbank Western Channel. The production, distribution and reuse of recycled water for direct, non-potable applications are presently regulated under Water Reclamation Requirements (WRR) Order No. 91-101, adopted by this Board on September 9, 1991, pursuant to California Water Code section 13523.
- 8. **Storm Water Management.** The City currently treats a fraction of storm water runoff from the Burbank SPP and the Burbank WRP. It has developed a Storm Water Pollution Prevention Plan (SWPPP) for storm water that does not enter the treatment system. Stormwater runoff from the Burbank SPP, which is not contained or treated, would still be discharged to the Burbank Western Channel.

The industrial stormwater discharge from the Burbank SPP is not regulated under this individual NPDES permit, but is instead regulated under the Statewide General Stormwater Permit for Industrial Discharges.

IV. **DISCHARGE OUTFALL AND RECEIVING WATER DESCRIPTION**

- 1. The Burbank WRP discharges tertiary treated wastewater to the Burbank Western Channel, tributary to the Los Angeles River, waters of the United States, above the estuary, at the following discharge point:

Discharge Serial No. 002: Discharge to the Burbank Western Channel near Burbank Boulevard (approximate coordinates: Latitude 34° 10' 58", Longitude 118° 18' 58").

As mentioned in a previous finding, the Burbank SPP no longer discharges process wastewater into the Burbank Western Channel, through Discharge Serial No. 001: [former coordinates: Latitude 34° 10' 42", Longitude 118° 18' 44"].

2. During dry weather (May 1 – October 31), the primary sources of water flow in the receiving waters, downstream of the discharge points, are the Burbank WRP effluent and other NPDES-permitted discharges, including urban runoff conveyed through the municipal separate storm sewer systems (MS4). Storm water and dry weather urban runoff from MS4 are regulated under a NPDES permit, *Waste Discharge Requirements for Municipal Storm Water and Urban Runoff Discharges within the County of Los Angeles* (LA Municipal Permit), NPDES Permit No. CAS004001.
3. The Los Angeles County Flood Control District channelized portions of the Los Angeles River to convey and control floodwater, and to prevent damage to homes located adjacent to the river. Although not its main purpose, the Los Angeles River conveys treated wastewater along with floodwater, and urban runoff. The Burbank Western Channel is concrete lined at the points of discharge, however, the Los Angeles River is unlined further downstream of its confluence with the Burbank Western Channel, in what is known as the Glendale Narrows. Groundwater recharge occurs incidentally, in these unlined areas of the Los Angeles River. At times when the groundwater table is high, groundwater rises and contributes flow to the Los Angeles River. Natural springs feed the river and support willows, sycamores, and cottonwood trees. South of the Glendale narrows, the Los Angeles River is concrete-lined down to Willow Street, in Long Beach.
4. The Los Angeles (LA) River watershed is one of the largest in the Region. It is also one of the most diverse in terms of land use patterns. The LA River drains a 824 square mile area. Approximately 324 square miles of the watershed are covered by forest or open space land including the area near the headwaters which originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The rest of the watershed is highly developed. The river flows through the San Fernando Valley past heavily developed residential and commercial areas. From the Arroyo Seco, north of downtown Los Angeles, to the confluence with the Rio Hondo, the river flows through industrial and commercial areas and is bordered by railyards, freeways, and major commercial and government buildings. From the Rio Hondo to the Pacific Ocean, the river flows through industrial, residential, and commercial areas, including major refineries and petroleum products storage facilities, major freeways, rail lines, and rail yards serving the Ports of Los Angeles and Long Beach.

Major tributaries to the river in the San Fernando Valley are the Pacoima Wash, Tujunga Wash (both drain portions of the Angeles National Forest in the San Gabriel Mountains), Burbank Western Channel and Verdugo Wash (both drain the

Verdugo Mountains). Due to major flood events at the beginning of the century, by the 1950's most of the river was lined with concrete. In the San Fernando Valley, there is a section of the river with a soft bottom at the Sepulveda Flood Control Basin. The Basin is a 2,150-acre open space upstream of the Sepulveda Dam designed to collect flood waters during major storms. Because the area is periodically inundated, it remains in a semi-natural condition and supports a variety of low-intensity uses as well as supplying habitat. At the eastern end of the San Fernando Valley, the river bends around the Hollywood Hills and flows through Griffith and Elysian Parks, in an area known as the Glendale Narrows. Since the water table was too high to allow laying of concrete, the river in this area has a rocky, unlined bottom with concrete-lined or rip-rap sides. This stretch of the river is fed by natural springs and supports stands of willows, sycamores, and cottonwoods. The many trails and paths along the river in this area are heavily used by the public for hiking, horseback riding, and bird watching.

V. DISCHARGE QUALITY DESCRIPTION

1. In 2005, the Discharger's discharge monitoring reports showed the following:
 - treated wastewater average annual flow rate of 5.8 mgd.
 - average annual removal rate of 98.8% and 98.6%, of BOD and total suspended solids, respectively.
 - Median and daily maximum coliform values as <2 Coliform Forming Units (CFU)/ 100 ml in the treated wastewater.
2. Based on data submitted in the 2005 Annual report, Table 1 represents the characteristics of the effluent discharged at Discharge No. 002 . (The "<" symbol indicates that the pollutant was not detected (ND) at that concentration level.) Attachment D contains an extensive statistical analyses of the effluent priority pollutants data from June 2003 to May 2006.

Table 1
Effluent Characteristics

Constituent	Unit	Average	Maximum	Minimum
Flow	mgd	5.8	8.2	4.1
pH	pH units	7.3	7.6	6.8
Temperature	°F	75	80	69
BOD ₅ 20°C	mg/L	4	5	3
Total coliform	CFU/100 mL			
Suspended solids	mg/L	2	3	2
Settleable solids	ml/L	<0.1	<0.1	<0.1

3. The Discharger's effluent demonstrated chronic toxicity during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause toxicity in the receiving water. However, the circumstances warranting a numeric chronic toxicity effluent limitation when there is reasonable potential were under review by the State Water Resources Control Board (State Board) in SWRCB/OCC Files A-1496 & A-1496(a) [Los

Coyotes/Long Beach Petitions]. On September 16, 2003, at a public hearing, the State Board adopted Order No. WQO 2003-0012, deferring the issue of numeric chronic toxicity effluent limitations until a subsequent phase of the SIP is adopted. In the mean time, the State Board replaced the numeric chronic toxicity limit with a narrative effluent limitation and a 1 TUc trigger, in the County Sanitation Districts of Los Angeles County's Long Beach and Los Coyotes WRP NPDES permits. This permit contains a similar chronic toxicity effluent limitation. This Order also contains a reopener to allow the Regional Board to modify the permit, if necessary, consistent with any new policy, law, or regulation.

VI. **APPLICABLE LAWS, PLANS, POLICIES, AND REGULATIONS**

The requirements contained in the proposed Order are based on the requirements and authorities contained in the following:

1. ***Federal Clean Water Act*** – Section 301(a) of the federal Clean Water Act (CWA) requires that point source discharges of pollutants to a water of the United States must be done in conformance with a NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality. CWA section 402 authorizes the USEPA or States with an approved NPDES program to issue NPDES permits. The State of California has an approved NPDES program.
2. ***Basin Plan*** – The Regional Board adopted a revised *Water Quality Control Plan for the Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) on June 13, 1994, and amended by various Regional Board resolutions. This updated and consolidated plan represents the Board's master quality control planning document and regulations. The State Board and the State of California Office of Administrative Law (OAL) approved the revised Basin Plan on November 17, 1994, and February 23, 1995, respectively. On May 26, 2000, the USEPA approved the revised Basin Plan except for the implementation plan for potential municipal and domestic supply (MUN) designated water bodies, which is not applicable to this discharge.

Ammonia Water Quality Objective (WQO). The 1994 Basin Plan contained water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board, with the adoption of Resolution No. 2002-011, Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (including enclosed bays, estuaries and wetlands) with Beneficial Use designations for protection of Aquatic Life. Resolution No. 2002-011 was approved by the State Board, OAL, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively, and is now in effect. The final effluent limitations for ammonia prescribed in this Order are based on the revised ammonia criteria (see Attachment H) and apply at the end of pipe.

Chloride WQO The 1994 Basin Plan contained water quality objectives for chloride in Table 3-8. However, the chloride objectives for some waterbodies

were revised on January 27, 1997, by the Regional Board, with the adoption of Resolution No. 97-02, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters*. Resolution No. 97-02 was approved by the State Board, the Office of Administrative Law, and USEPA on October 23, 1997, January 9, 1998, and February 5, 1998, respectively, and are now in effect. The chloride WQO was revised from 150 mg/L to 180 mg/L, for the following segments of the Los Angeles River:

- a. Between Sepulveda Flood Control Basin and Figueroa Street (including Burbank Western Channel only), and
- b. Between Figueroa Street and the estuary (including Rio Hondo below Santa Ana Freeway only).

The final effluent limitations for chloride prescribed in this Order are based on the revised chloride WQOs and apply at the end of pipe.

The Basin Plan (i) designates beneficial uses for surface and groundwater, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to the State's antidegradation policy, and (iii) includes implementation provisions, programs, and policies to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. The 1994 Basin Plan was prepared to be consistent with all State and Regional Board plans and policies adopted in 1994 and earlier. This Order implements the plans, policies, and provisions of the Board's Basin Plan.

3. **Sources of Drinking Water Policy.** On May 19, 1988, the State Board adopted Resolution No. 88-63, *Sources of Drinking Water (SODW) Policy*, which established a policy that all surface and ground waters, with limited exemptions, are suitable or potentially suitable for municipal and domestic supply. To be consistent with State Board's SODW policy, on March 27, 1989, the Regional Board adopted Resolution No. 89-03, *Incorporation of Sources of Drinking Water Policy into the Water Quality Control Plans (Basin Plans) – Santa Clara River Basin (4A)/ Los Angeles River Basin (4B)*.
4. **Potential Municipal and Domestic Supply (P* MUN)** – Consistent with Regional Board Resolution No. 89-03 and State Board Resolution No. 88-63, in 1994 the Regional Board conditionally designated all inland surface waters in Table 2-1 of the 1994 Basin Plan as existing, intermittent, or potential for Municipal and Domestic Supply (P* MUN). However, the conditional designation in the 1994 Basin Plan included the following implementation provision: "no new effluent limitations will be placed in Waste Discharge Requirements as a result of these [potential MUN designations made pursuant to the SODW policy and the Regional Board's enabling resolution] until the Regional Board adopts [a special Basin Plan Amendment that incorporates a detailed review of the waters in the Region that should be exempted from the potential MUN designations arising from SODW policy and partial approval (May 26, 2000) of the 1994 Basin Plan amendments and acknowledged that the conditional designations do not currently have a legal

effect, do not reflect new water quality standards subject to USEPA review, and do not support new effluent limitations based on the conditional designations stemming from the SODW Policy until a subsequent review by the Regional Board finalizes the designations for these waters. This permit is designed to be consistent with the existing Basin Plan.

5. ***State Implementation Plan (SIP) and California Toxics Rule (CTR).*** The State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Plan or SIP) on March 2, 2000. The SIP was amended by Resolution No. 2000-30, on April 26, 2000, and the Office of Administrative Law approved the SIP on April 28, 2000. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California which are subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) and the Federal Clean Water Act (CWA). This policy also establishes the following:
- A. Implementation provisions for priority pollutant criteria promulgated by USEPA through the CTR and for priority pollutant objectives established by Regional Boards in their Basin Plans;
 - B. Monitoring requirements for priority pollutants with insufficient data to determine reasonable potential;
 - C. Monitoring requirements for 2, 3, 7, 8 – TCDD equivalents; and,
 - D. Chronic toxicity control provisions.

The CTR became effective on May 18, 2000 (codified as 40 CFR, Part 131.38). The SIP (which implements CTR criteria) was revised by the State Board on February 24, 2005, and became effective on May 31, 2005. Toxic pollutant limits are prescribed in this Order to implement the CTR, the SIP, and the Basin Plan.

In the CTR, USEPA promulgated criteria that protects the general population at an incremental cancer risk level of one in a million (10^{-6}), for all priority toxic pollutants regulated as carcinogens. USEPA recognizes that adoption of a different risk factor is outside of the scope of the CTR. However, states have the discretion to adopt water quality criteria that result in a higher risk level, if it can demonstrate that the chosen risk level is adequately protective of the most highly exposed subpopulation, and has completed all necessary public participation. This demonstration has not happened in California. Further, the information that is available on highly exposed subpopulations in California supports the need to protect the general population at the 10^{-6} level. The Discharger may undertake a study, in accordance with the procedures set forth in Chapter 3 of USEPA's Water Quality Standards Handbook: Second Edition (EPA-823-B-005a, August 1994) to demonstrate that a different risk factor is more appropriate. Upon completion of the study, the State Board will review the results and determine if the risk factor needs to be changed. In the mean time, the State will continue using a 10^{-6} risk level, as it has done historically, to protect the population against carcinogenic pollutants.

6. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under USEPA's new regulation (also known as the *Alaska rule*), new and revised standards submitted to USEPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by EPA.
7. **Beneficial Uses.** The Basin Plan contains water quality objectives and beneficial uses for Burbank Western Channel, the Los Angeles River, and its contiguous waters.

A. The beneficial uses of the receiving surface water are:

Burbank Western Channel - Hydrologic Unit 405.21	
Intermittent:	non-contact water recreation, and
Potential:	municipal and domestic water supply (MUN) ¹ , water contact recreation ² , warm freshwater habitat, and wildlife habitat.
Los Angeles River (upstream of Figueroa Street) - Hydrologic Unit 405.21	
Existing:	groundwater recharge, water contact recreation and non-contact recreation, warm freshwater habitat, wildlife habitat, and wetland habitat.
Potential:	MUN ¹ , and industrial process supply.
Los Angeles River (downstream of Figueroa Street) - Hydrologic Unit 405.15	
Existing:	groundwater recharge, water contact ² recreation and non-contact recreation, and warm freshwater habitat.
Potential:	MUN ¹ , and industrial process supply.
Los Angeles River to Estuary - Hydrologic Unit 405.12	
Existing:	groundwater recharge, water contact ² recreation and non-contact water recreation, warm freshwater habitat, marine habitat, wildlife habitat, and rare, threatened, or endangered species.
Potential:	MUN ¹ , industrial service supply, industrial process supply, migration of aquatic organisms, spawning, reproduction, and/or early development, and shellfish harvesting.
Los Angeles River Estuary - Hydrologic Unit 405.12	
Existing:	industrial service supply, navigation, water contact ² recreation and non-contact water recreation, commercial and sport fishing, estuarine habitat,

¹ The potential MUN beneficial use for the water body is consistent with Regional Board Resolution 89-03; however the Regional Board has only conditionally designated the MUN beneficial uses and at this time cannot establish effluent limitations designed to protect the conditional designation.

² Access is prohibited by Los Angeles County DPW.

	marine habitat, wildlife habitat, rare, threatened, or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, and wetland habitat.
Potential:	shellfish harvesting.

B. The beneficial uses of the groundwater are:

San Fernando Basin (East of Highway 405 overall) - DWR Basin No. 4-12	
Existing:	municipal and domestic supply, industrial service supply; industrial process supply; and, agricultural supply.
Los Angeles Coastal Plain (Central Basin) – DWR Basin No. 4-11	
Existing:	municipal and domestic supply, industrial service supply; industrial process supply; and, agricultural supply.
Los Angeles Coastal Plain (West Coast Basin) – DWR Basin No. 4-11	
Existing:	municipal and domestic supply, industrial service supply; industrial process supply; and, agricultural supply.

C. The requirements in this Order are intended to protect designated beneficial uses and enhance the water quality of the watershed. Effluent limits must protect both existing and potential beneficial uses.

D. Consistent with Regional Board Resolution No. 89-003 and State Board Resolution No. 88-63, all inland surface waters in Table 2-1 of the 1994 Basin Plan are designated existing, intermittent, or potential for MUN.

8. ***Title 22 of the California Code of Regulations*** - The California Department of Health Services established primary and secondary maximum contaminant levels (MCLs) for inorganic, organic, and radioactive contaminants in drinking water. These MCLs are codified in Title 22, California Code of Regulations (Title 22).

The Basin Plan (Chapter 3) incorporates Title 22 primary MCLs by reference. This incorporation by reference is prospective including future changes to the incorporated provisions as the changes take effect. Title 22 primary MCLs have been used as bases for effluent limitations in WDRs and NPDES permits to protect the groundwater recharge beneficial use when that receiving groundwater is designated as MUN. Also, the Basin Plan specifies that “Ground waters shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.” Therefore the secondary MCL’s, which are limits based on aesthetic, organoleptic standards, are also incorporated into this permit to protect groundwater quality.

MCL Development Process - Health and Safety Code §116365(a) requires the Department of Health Services (DHS), while placing primary emphasis on the protection of public health, to establish a contaminant's maximum contaminant level (MCL) at a level as close as is technically and economically feasible to its public health goal (PHG). The PHG—established by Cal/EPA's Office of

Environmental Health Hazard Assessment (OEHHA)—is the contaminant's concentration in drinking water that does not pose any significant risk to health, derived from a human health risk assessment.

As part of the MCL process, DHS evaluates the technical and economic feasibility of regulating a chemical contaminant. Technical feasibility includes an evaluation of commercial laboratories' ability to analyze for and detect the chemical in drinking water, the costs of monitoring, and the costs of treatment required to remove it. Costs are required by law to be considered whenever MCLs are adopted.

Then, the proposed MCL moves through a formal regulatory process. DHS releases proposed regulations for a 45-day public comment period. If any "Post-hearing" changes made in response to comments, DHS subsequently provides an additional 15-day public comment period. Once DHS completes its process, it submits the regulation package, including responses to public comments, to the Office of Administrative Law (OAL). OAL has 30 working days to review the regulation and approve or reject it. If approved by OAL, it is filed with the Secretary of State, becoming effective in 30 calendar days.

Groundwater Recharge. Sections of the Los Angeles River, downstream of the Burbank WRP discharge point, is designated as GWR. The depth of groundwater below the Burbank WRP is approximately 100 feet below ground surface. Surface water from the Los Angeles River enters the San Fernando Valley and the Central Los Angeles Coastal Plain Groundwater Basins. Since ground water from these basins is used to provide drinking water to people, Title 22-based limits are needed to protect that drinking water supply. By limiting the contaminants in the Burbank WRP discharge, the amount of pollutants entering the surface waters and groundwater basins are correspondingly reduced. Once groundwater basins are contaminated, it may take years to clean up, depending on the pollutant. Compared to surface water pollution, investigations and remediation of groundwater are often more difficult, costly, and extremely slow. For these reasons Title 22-based limits will remain in the NPDES permit.

9. **Antidegradation Policy** - On October 28, 1968, the State Board adopted Resolution No. 68-16, *Maintaining High Quality Water*, which established an antidegradation policy for State and Regional Boards. The State Board has, in State Board Order No. 86-17 and an October 7, 1987 guidance memorandum, interpreted Resolution No. 68-16 to be fully consistent with the federal antidegradation policy. Similarly, the CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR, Section 131.12) require that all permitting actions be consistent with the federal antidegradation policy. Together, the State and Federal policies are designed to ensure that a water body will not be degraded resulting from the permitted discharge. The provisions of this Order are consistent with the antidegradation policies.
10. **Watershed Approach** - This Regional Board has been implementing a Watershed Management Approach (WMA), to address water quality protection in the Los Angeles Region, as detailed in the Watershed Management Initiative (WMI). The WMI is designed to integrate various surface and ground water regulatory programs

while promoting cooperative, collaborative efforts within a watershed. It is also designed to focus limited resources on key issues and use sound science. Information about the Los Angeles River Watershed and other watersheds in the region can be obtained from the Regional Board's web site at <http://www.swrcb.ca.gov/rwqcb4/> and clicking on the word "Watersheds".

Pursuant to this Regional Board's watershed initiative framework, the Los Angeles River Watershed Management Area was the targeted watershed for fiscal year 1998-1999. However, the NPDES permit renewals were re-scheduled for the 2003-2004 fiscal year so that provisions of the CTR and SIP could be incorporated into the permits.

VII. REGULATORY BASIS FOR EFFLUENT AND RECEIVING WATER LIMITS AND OTHER DISCHARGE REQUIREMENTS

1. ***Water Quality Objectives and Effluent Limits*** - Water Quality Objectives (WQOs) and effluent limitations in this permit are based on:
 - A. Applicable State Regulations/Policies/Guidances
 - a. The plans, policies and water quality standards (beneficial uses + objectives + antidegradation policy) contained in the 1994 *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, as amended, including chemical constituent limitations established by incorporating the California Code of Regulations, Title 22, Maximum Contaminant Levels designed to protect the existing drinking water use of the receiving groundwaters;
 - b. California Toxics Rule (40 CFR 131.38);
 - c. The State Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP);
 - d. Administrative Procedures Manual and Administrative Procedure Updates; and,
 - e. Porter-Cologne Water Quality Act (Water Code § 13000 et seq.).
 - B. Applicable Federal Regulations/Policies/Guidances
 - a. Federal Clean Water Act;
 - b. 40 CFR, Parts 122, 131, among others;
 - c. Best Professional Judgment (pursuant to 40 CFR 122.44);
 - d. USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;

- e. USEPA Whole Effluent Toxicity (WET) Control Policy July 1994;
- f. Inspectors Guide for Evaluation of Municipal Wastewater Treatment Plants, April 1979 (EPA/430/9-79-010);
- g. Fate of Priority Pollutants in Publicly Owned Treatment Works Pilot Study October 1979 (EPA-440/1-79-300);
- h. *Technical Support Document for Water Quality Based Toxics Control*, March 1991 (EPA-505/ 2-90-001);
- i. *U.S. EPA NPDES Permit Writers' Manual*, December 1996 (EPA-833-B-96-003); and,
- j. USEPA's *National Recommended Water Quality Criteria: 2002*, November 2002 (EPA-822-R-02-047).

Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

2. **Mass and Concentration Limits** – 40 CFR section 122.45(f)(1) requires that, except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR section 122.45(f)(2) allows the permit writer, at their discretion, to express limits in additional units (e.g., concentration units). The regulations mandate that, where limits are expressed in more than one unit, the permittee must comply with both.

Generally, mass-based limits ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, discourage the reduction in treatment efficiency during low-flow periods and require proper operation of the treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low-flow periods and still meet its mass-based limits. To account for this, this permit includes mass and concentration limits for some constituents, except during wet-weather, storm events that cause flows to the treatment plant to exceed the plant's design capacity.

3. **Maximum Daily Effluent Limitations** – Pursuant to 40 CFR section 122.45(d)(2), for POTWs continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations. It is impracticable to only include average weekly and average monthly effluent limitations in the permits, because a single daily discharge of certain pollutants, in excess amounts, can cause violations of water quality objectives. The effects of certain pollutants on aquatic organisms are often rapid. For many

pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent limitations, as referenced in 40 CFR section 122.45(d)(1), are included in the permit for certain constituents as discussed in this Fact Sheet.

4. **Pretreatment** – Pursuant to 40 CFR section 403, the City developed and has been implementing an approved industrial wastewater Pretreatment Program. This Order requires implementation of the approved Pretreatment Program.
5. **Sludge Disposal** - To implement CWA Section 405(d), on February 19, 1993, the USEPA promulgated 40 CFR, Part 503 to regulate the use and disposal of municipal sewage sludge. This regulation was amended on September 3, 1999. The regulation requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. It is the responsibility of the Discharger to comply with said regulations that are enforceable by USEPA, because California has not been delegated the authority to implement this program.
6. **Storm Water Management** – CWA section 402(p), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. Pursuant to this requirement, in 1990, USEPA promulgated 40 CFR section 122.26 that established requirements for storm water discharges under a NPDES program. To facilitate compliance with federal regulations, on November 1991, the State Board issued a statewide general permit, *General NPDES Permit No. CAS000001 and Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities*. This permit was amended in September 1992 and reissued on April 17, 1997 in State Board Order No. 97-03-DWQ to regulate storm water discharges associated with industrial activity. The Burbank WRP is covered by general NPDES permit No. CAS000001.
7. **Clean Water Act Effluent Limitations** - Numeric and narrative effluent limitations are established pursuant to Section 301 (Effluent Limitations), Section 302 (Water Quality-Related Effluent Limitations), Section 303 (Water Quality Standards and Implementation Plans), Section 304 (Information and Guidelines [Effluent]), Section 305 (Water Quality Inventory), Section 307 (Toxic and Pretreatment Effluent Standards), and Section 402 (NPDES) of the CWA. The CWA and amendments thereto are applicable to the discharges herein.
8. **Antibacksliding Policies** - Antibacksliding provisions are contained in Sections 303(d)(4) and 402(o) of the CWA, and in 40 CFR section 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions. Section 402(o) of the CWA establishes express statutory language prohibiting the backsliding of effluent limitations. It consists of the following three parts:
 - A. Section 402(o)(1) prohibits (subject to exceptions in section 303(d)(4) and/or 402(o)(2)) the relaxation of effluent limitations for two situations:
 - a. When a permittee seeks to revise a technology-based effluent limitation based on BPJ to reflect a subsequently promulgated effluent guideline which is less stringent, and

- b. When a permittee seeks relaxation of an effluent limitation which is based upon a changed State treatment standard or water quality standard.
- B. Section 402(o)(2) outlines specific exceptions to the general prohibition against establishment of less stringent effluent limitations. Codified in the NPDES regulations at 40 CFR 122.44(l), Section 402(o)(2) provided that the establishment of less stringent limits may be allowed where:
 - a. There have been material and substantial alterations or additions to the permitted facility which justify this relaxation;
 - b. New information (other than revised regulations, guidance, or test methods) is available that was not available at the time of permit issuance which would have justified a less stringent effluent limitation;
 - c. Technical mistakes or mistaken interpretations of the law were made in issuing the permit under Section 402(a)(1)(b);
 - d. Good cause exists due to events beyond the permittee's control (e.g., acts of God) and for which there is no reasonably available remedy;
 - e. The permit has been modified under certain specified sections of the CWA; or,
 - f. The permittee has installed and properly operated and maintained required treatment facilities, but still has been unable to meet the permit limitations (relaxation may only be allowed to the treatment levels actually achieved).

Although the statute identified six exceptions where effluent limitations may be relaxed, the language specifically stated that exception "c" (as listed above) does not apply to water quality-based effluent limitations. Further, exception "e" as listed above only concerns sections of the CWA governing technology-based limits. Thus, exceptions c & e would only apply to technology-based effluent limitations.

- C. Section 402(o)(3) prohibits the relaxation of effluent limitations in all cases if a revised effluent limitation would result in a violation of applicable effluent limitation guidelines or water quality standards, including antidegradation requirements. Thus, even if any of the antibacksliding exceptions outlined in either the statute or regulations are applicable, Section 402(o)(3) acts as a floor and restricts the extent to which effluent limitations may be relaxed. This requirement affirms existing provisions of the CWA that require limits, standards, and conditions to ensure compliance with applicable technology-based limits and water quality standards.

9. ***Applicable Water Quality Objectives*** - 40 CFR, Section 122.44(d)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial use.

The Basin Plan includes narrative and numeric Water Quality Objectives (WQOs). The CTR promulgates numeric aquatic life criteria for 24 toxic pollutants and numeric human health criteria for 92 toxic pollutants. A compliance schedule provision in the CTR and the SIP authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal CTR criteria when certain conditions are met. CTR's Compliance Schedule provisions sunsetted on May 18, 2005. After this date, the provisions of the SIP allow for Compliance Schedules not to exceed five years from issuance or past May 17, 2010, whichever is sooner. Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR section 122.44(d) specifies that WQBELs may be set based on USEPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

10. ***Types of Pollutants*** – For CWA regulatory purposes, pollutants are grouped into three general categories under the NPDES program: conventional, toxic, and non-conventional. By definition, there are five conventional pollutants (listed in 40 CFR 401.16) – 5-day biochemical oxygen demand, total suspended solids, fecal coliform, pH, and oil and grease. Toxic or “priority” pollutants are those defined in Section 307(a)(1) of the CWA (and listed in 40 CFR 401.15 and 40 CFR 423, Appendix A) and include heavy metals and organic compounds. Non-conventional pollutants are those which do not fall under either of the two previously described categories and include such parameters as ammonia, phosphorous, chemical oxygen demand, whole effluent toxicity, etc.
11. ***Technology-Based Limits for Municipal Facilities (POTWs)*** – Technology-based effluent limits require a minimum level of treatment for industrial/municipal point sources based on currently available treatment technologies while allowing the Discharger to use any available control techniques to meet the effluent limits. The 1972 CWA required POTWs to meet performance requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level—referred to as “secondary treatment”—that all POTWs were required to meet by July 1, 1977. More specifically, Section 301(b)(1)(B) of the CWA required that USEPA develop secondary treatment standards for POTWs as defined in Section 304(d)(1). Based on this statutory requirement, USEPA developed national secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all POTWs and identify the minimum level of effluent quality to be attained by secondary treatment in terms of five-day biochemical oxygen demand, total suspended solids, and pH.
12. ***Water Quality Based Effluent Limits (WQBELs)*** - Water quality-based effluent limits are designed to protect the quality of the receiving water by ensuring that State water quality standards are met by discharges from an industrial/municipal point source. If, after technology-based effluent limits are applied, a point source

discharge will cause, have the reasonable potential to cause, or contribute to an exceedance of an applicable water quality criterion, then 40 CFR 122.44(d)(1) requires that the permit contain a WQBEL. Although the CWA establishes explicit technology-based requirements for POTWs, Congress did not exempt POTWs from additional regulation to protect water quality standards. As a result, POTWs are also subject to WQBELs. This was upheld by the Appellate Court in *the City of Burbank, City of Los Angeles v. State Water Resources Control Board* case. Applicable water quality standards for the San Gabriel River are contained in the Basin Plan and CTR, as described in previous findings.

13. **Water Quality Based Effluent Limitations for Toxic Pollutants.** Toxic substances are regulated in this permit by water quality based effluent limitations derived from the 1994 Basin Plan, the CTR, and/or best professional judgment (BPJ) pursuant to Part 122.44. If a discharge causes, has a reasonable potential to cause, or contribute to a receiving water excursion above a narrative or numeric objective within a State water quality standard, federal law and regulations, as specified in 40 CFR 122.44(d)(1)(i), and in part, the SIP, require the establishment of WQBELs that will protect water quality. As documented in the fact sheet, pollutants exhibiting reasonable potential in the discharge, authorized in this Order, are identified in the Reasonable Potential Analysis (RPA) section and have final effluent limits. Reasonable potential was not triggered for some of the 126 priority pollutants and final limits cannot be determined at this time. The Discharger is required to gather the appropriate data and the Regional Board will determine if final effluent limits are needed. If final limits are needed, the permit will be reopened and limits will be included in the permit.
14. **Stringency Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD and TSS. Restrictions on BOD and TSS are specified in federal regulations as discussed in findings. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. In addition, this Order contains effluent limitations more stringent than the minimum federal technology-based requirements that are necessary to meet water quality standards.

This Order contains some pollutant restrictions that are more stringent than applicable federal requirements and standards. Specifically, this Order includes effluent limitations for arsenic, bis(2-ethylhexyl)phthalate, iron, and total trihalomethanes that are more stringent than applicable federal standards, but that are nonetheless necessary to meet numeric objectives or protect the beneficial uses of both surface water (under the CWA) and groundwaters (under CWC). The rationale for including these limitations is explained in Section X.2 of this Fact Sheet. In addition, the Regional Water Board has considered the factors in Water Code section 13241, as discussed in Section X.3 of this Fact Sheet.

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic

pollutant water quality-based effluent limitations were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 C.F.R. 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the CTR-SIP, which was approved by USEPA on May 1, 2001. All designated beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the [Clean Water] Act" pursuant to 40 C.F.R. 131.21(c)(1). [The remaining water quality objectives (Basin Plan Amendments) implemented by this Order were subsequently approved by USEPA, and are applicable water quality standards pursuant to 40 C.F.R. 131.21(c)(2).] Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the Clean Water Act and the applicable water quality standards for purposes of the Clean Water Act.

15. On August 2005, the discharger, during a meeting with Regional Board staff, presented economic information indicating that the cost of complying with the ammonia nitrogen and nitrate plus nitrite as nitrogen effluent limitations cost approximately \$16 million, for the nitrification denitrification (NDN) capital improvement project. However, the discharger has not submitted any other economic information regarding the cost of compliance with any other permit requirements.
16. ***Basis for Effluent Limits for 303(d) Listed Pollutants*** - For 303(d) listed pollutants, the Regional Board plans to develop and adopt Total Maximum Daily Loads (TMDLs) which will specify wasteload allocations (WLAs) for point sources and load allocations (LA) for non-point sources, as appropriate. Following the adoption of TMDLs by the Regional Board, NPDES permits will be issued, and where appropriate, reopened to include effluent limits consistent with the assumptions of the TMDL, based on applicable WLAs. In the absence of a TMDL, the permits will include water quality-based effluent limitations derived as provided in the Basin Plan, CTR, and SIP (if applicable). These effluent limits are based on criteria applied end-of-pipe due to no mixing zone or dilution credits allowed.
17. ***303(d) Listed Pollutants*** - On July 25, 2003, USEPA approved the State's most recent list of impaired waterbodies. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the Federal Clean Water Act to identify specific impaired waterbodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources.

The Burbank Western Channel, Los Angeles River, and its tributaries are on the 303(d) List. The following pollutants/stressors, from point and non-point sources, were identified as impacting the receiving waters:

Burbank Western Channel - Hydrologic Unit 405.21

- Algae, ammonia, cadmium, odors, scum/foam-unnatural, and trash.

Los Angeles River Reach 3 (Figueroa St. to Riverside Drive) Hydro. Unit 405.21:

- Ammonia, nutrients (algae), odors, and scum/foam-unnatural.

Los Angeles River - Reach 2 (Carson to Figueroa Street) Hydrologic Unit 405.15:

- Ammonia, coliform, lead, nutrients (algae), odors, oil, scum, and trash;

Los Angeles River - Reach 1 (Estuary to Carson Street) Hydrologic Unit 405.12:

- Total aluminum, ammonia, dissolved cadmium, dissolved copper, coliform, lead, nutrients (algae), pH, scum/foam-unnatural, and dissolved zinc; and,

Los Angeles River Estuary (Queensway Bay):

- Chlordane (sediment), DDT (sediment), Lead (sediment), PCBs (sediment), and zinc (sediment).

The Regional Board revised the 303(d) list in 2002 and submitted the draft to the State Board for approval. The State Board had scheduled the draft 303(d) list, dated October 15, 2002, for approval at two of its meetings, however the item was postponed to hold additional workshops and to allow more time for the public to submit comments. The draft 303(d) list dated October 15, 2002, was revised on January 13, 2003, based on comments received. The draft 303(d) list, dated January 13, 2003, was adopted by the State Board at its February 4, 2003 meeting. The adopted 303(d) list was approved by USEPA on July 25, 2003.

18. ***Relevant Total Maximum Daily Loads (TMDLs).*** A Total Maximum Daily Load (TMDL) is a determination of the amount of a pollutant, from point, nonpoint, and natural background sources, including a margin of safety, which may be discharged to a water quality-limited water body. Section 303(d) of the CWA established the TMDL process. The statutory requirements are codified at 40 CFR, Part 130.7. TMDLs must be developed for the pollutants of concern which impact the water quality of water bodies on the 303(d) list. According to the TMDL schedule, under the amended consent decree, *Heal the Bay, Santa Monica Bay Keeper, et al. v. Browner, et al.* (March 23, 1999), the trash, nitrogen, and metals TMDLs for the Los Angeles River must be completed by March 2001, March 2003, and March 2004, respectively. The coliform TMDL for Los Angeles Harbor is scheduled for completion by March 2006.

- A. **Nitrogen Compounds TMDL.** On July 10, 2003, the Regional Board adopted Resolution No. 2003-009, *Amendment to the Basin Plan for the Los Angeles Region to Include a TMDL for Nitrogen Compounds and Related Effects in the Los Angeles River (Nitrogen Compounds TMDL)*. On November 19, 2003, the State Board approved the *Nitrogen Compounds TMDL*. However, on December 4, 2003, the Regional Board revised the Nitrogen Compound TMDL by adopting Resolution No. 2003-016, *Revision of Interim Effluent Limits for Ammonia in the Amendment to the Water Quality Control Plan for the Los Angeles Region to Include a TMDL for Nitrogen Compounds and Related Effects in the Los Angeles River*. Resolution No. 2003-016 only revised the portion of the Nitrogen Compounds TMDL containing interim limits for total ammonia as nitrogen, for the Glendale and Tillman WRPs. All other portions of the TMDL remained unchanged. The

Nitrogen Compounds TMDL went into effect on March 23, 2004, when the Regional Board filed the Notice of Decision with the California Resources Agency.

- B. **Trash TMDL.** On January 25, 2001, the Regional Board adopted Resolution No. 01-006. However, on September 19, 2001, the Regional Board reconsidered Resolution No. 01-006 and adopted Resolution No. 2001-013, *Amendment to the Basin Plan for the Los Angeles Region to Incorporate a TMDL for Trash in the Los Angeles River (Trash TMDL)*, which supercedes Resolution No. 01-006. On February 19, 2002, the State Board adopted Resolution No. 02-038, approving the Regional Board's Trash TMDL. OAL and USEPA subsequently approved the Trash TMDL later that year.
- C. **Metal TMDL.** On June 2, 2005, the Regional Board adopted Resolution No. R05-006, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Metals for the Los Angeles River and its Tributaries (LA River Metals TMDL)*. The LA River Metals TMDL contains waste load allocations for copper, lead, cadmium and zinc. Reasonable Potential Analysis (RPA) showed exceedances of water quality objectives in receiving water for these metals. Therefore, numerical limitations have been prescribed for these metals in this permit. On October 20, 2005, the State Board approved the *LA River Metals TMDL* by adopting Resolution No. 2005-0077. On December 9, 2005 and December 22, 2005, respectively, OAL and USEPA approved the *LA River Metals TMDL*. It went into effect on January 11, 2006.
19. ***Mixing Zones, Water Effects Ratio (WER), and Dilution Credits.*** Mixing zones, dilution credits, WER, and attenuation factors are not authorized in this Order. Allowance of a mixing zone is in the Regional Board's discretion under Section 1.4.2 of the SIP and under the Basin Plan (Basin Plan Chapter 4, page 30). If the Discharger subsequently conducts appropriate mixing zone, WER, and dilution credit studies, the Regional Board can evaluate the propriety of granting a mixing zone or establishing dilution credits.

Translator study - On September 2004, the City of Burbank submitted a draft workplan to conduct a Copper Translator Study. On November 18, 2004, Regional Board staff provided preliminary comments, suggested that the workplan be revised, and requested that it be resubmitted. In December 2004, the City subsequently submitted a revised draft workplan for Regional Board approval. However, since the City did not address all of the Regional Board staff's comments, approval of the workplan is still pending. Once approved, sampling along the Burbank Western Channel will begin.

Water Effects Ratio – The City of Burbank, in conjunction with the City of Los Angeles, is pursuing two separate water effect ratio (WER) studies, one for copper and another for ammonia. Larry Walker Associates (LWA) has been hired by the cities to conduct both the LA River Copper WER Study and the LA River Ammonia WER, according to their respective approved workplans. Technical Advisory Committees (TACs) have been assembled to provide independent review of the

proposed WERs. A memorandum dated June 20, 2006, written by LWA, addressed to the Copper WER TAC, presents the results of sampling conducted and recommends different WERs for various reaches of the LA River. LWA was recommending a 5.7 WER for the Burbank Western Channel. Both WER studies have yet to be approved by the Regional Board. Although the WER studies may not be finalized before the permit goes to the Board for renewal, this permit contains a reopener which allows the modification of final effluent limits, if at the conclusion of necessary studies conducted by the Discharger, the Regional Board determines that dilution credits, attenuation factors, water effect ratios, or metal translators are warranted.

Dilution and Attenuation Factors - On July 16, 2003, the State Board adopted Order No. WQO 2003-0009, directing Regional Board staff to work with CSDLAC, once data was provided, to determine whether dilution and attenuation are appropriate factors to consider in developing effluent limits to protect the GWR beneficial use, in the Whittier Narrows WRP NPDES permit. However, this does not apply to the Burbank WRP at this time, because the City of Burbank has not provided the necessary site-specific data or studies regarding the ground water basins in the San Fernando Valley and the Central Los Angeles Coastal Plain Groundwater Basin areas.

At this time, the Regional Board has concluded that mixing zones, WER, and dilution credits would be inappropriate to grant, in light of the following factors:

- A. The Burbank WRP and Burbank SPP discharges contribute the largest flow into the Burbank Western Wash, within the Los Angeles River watershed, in the vicinity of the discharge point where it overwhelms the receiving water providing very limited mixing and dilution;
- B. Even in the absence of the Burbank WRP and Burbank SPP discharges, the receiving water primarily consists of nuisance flows and other effluents, limiting its assimilative capacity;
- C. Several reaches of the Los Angeles River [including those subject to this Order] are 303(d) listed (i.e., impaired) for certain constituents;
- D. Impaired waters do not have the capacity to assimilate pollutants of concern at concentrations greater than the applicable objective;
- E. For the protection of the beneficial uses is listed on Finding 28;
- F. Consistent with Antidegradation Policies;
- G. Because a mixing zone study has not been conducted;
- H. Because hydrologic models of the discharge and the receiving waters have not been conducted; and,
- I. Because the final WER study reports have not been approved by the Board.

19. Specific effluent limitations for each constituent contained in this order were developed in accordance with the foregoing laws, regulations, plans, policies, and guidance. The specific methodology and example calculations are documented in the fact sheet prepared by Regional Board staff that accompanies this Order.

VIII. REASONABLE POTENTIAL ANALYSIS

1. As specified in 40 CFR, Part 122.44(d)(1)(i), permits are required to include limits for all pollutants “which the Director (defined as the Regional Administrator, State Director, or authorized representative in 40 CFR, Part 122.2) determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard.”
 - A. Using the method described in the TSD, the Regional Board has conducted Reasonable Potential Analysis (RPA) for:
 1. Chronic Toxicity - RPA was conducted for Chronic Toxicity (Table R2 of this Fact Sheet) using the discharger’s effluent data from their ROWD and annual self monitoring reports. Chronic Toxicity effluent data is summarized in Table D2 of this Fact Sheet. The RPA compares the effluent data with USEPA’s 1 TUc water quality criteria. The Discharger’s effluent demonstrated Chronic Toxicity during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause toxicity in the receiving water and, consistent with SIP section 4, the Order contains a narrative effluent limitation for Chronic Toxicity. The circumstances warranting a numeric Chronic Toxicity effluent limitation were reviewed by the State Board in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. On September 16, 2003, the State Board adopted Order No. WQO 2003-0012, deferring the numeric chronic toxicity effluent limitation issue until a subsequent phase of the SIP is adopted, and replaced the numeric chronic toxicity effluent limitation with a narrative effluent limitation for the time being.
 2. Nitrate plus nitrite as nitrogen and other constituents with non-CTR based limits – RPA was conducted for Nitrate plus Nitrite as Nitrogen and other constituents (Table R2 of the accompanying Fact Sheet) using the Discharger’s effluent data from their self monitoring reports. The effluent data for Non-priority pollutants is summarized in Table D2 of the accompanying Fact Sheet. The TSD RPA procedure compares the effluent data with the Basin Plan water quality objectives (WQOs) and other applicable criteria, and uses statistics to predict a receiving water concentration. Based on information submitted to the Regional Board by the Discharger, and using the TSD RPA procedure, the Regional Board has determined that there is a reasonable potential that the discharge will cause or contribute to an exceedance of the applicable criteria for: Nitrate plus Nitrite as Nitrogen, arsenic, bis(2-ethylhexyl)phthalate, total trihalomethanes and iron. Therefore, the

Order contains numeric effluent limitations for Nitrate plus Nitrite as Nitrogen, arsenic, bis(2-ethylhexyl)phthalate, total trihalomethanes and iron.

- B. Using the method described in the SIP, the Regional Board has conducted RPA for priority pollutants using the discharger's effluent data contained in Table D1 and receiving water data contained in Table D3. The RPA compares the effluent data with water quality objectives in the Basin Plan and CTR.

1. **Reasonable Potential Determination** - The RPA (per the SIP) involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent based on the effluent concentration data. There are three tiers to determining reasonable potential. If any of the following three tiers is triggered, then reasonable potential exists:
 - a. For the first tier, the MEC is compared with the lowest applicable Water Quality Objective (WQO), which has been adjusted for pH, hardness and translator data, if appropriate. If the MEC is greater than the (adjusted) WQO, then there is reasonable potential for the constituent to cause or contribute to an excursion above the WQO and a WQBEL is required. However, if the pollutant was not detected in any of the effluent samples and all of the reported detection limits are greater than or equal to the WQO, proceed with Tier 2. The Regional Board exercised its discretion in identifying all available, valid, relevant, representative data and information in accordance with SIP Section 1.2 (page 5).
 - b. For the second tier, the observed maximum ambient background concentration (B) for the pollutant is compared with the adjusted WQO. If B is greater than the adjusted WQO, and if the pollutant was present in the effluent, then a WQBEL is required, because the effluent has reasonable potential to contribute to an exceedance of the WQO. The Regional Board exercised its discretion in identifying all available, applicable ambient background data in accordance with SIP Section 1.4.3 (page 18).
 - c. For the third tier, other information is used to determine RPA, such as the current CWA 303(d) List. Section 1.3 of the SIP describes the type of information that can be considered in Tier 3.

For all parameters that have reasonable potential to cause or contribute to an exceedance of a WQO/criteria, numeric WQBELs are required. Section 1.4, Step 5 of the SIP (Page 10 states that MDELs shall be used for POTWs in place of average weekly

limitations. WQBELs are based on CTR, USEPA water quality criteria, and Basin Plan objectives (among which are the MCLs included by reference).

If the data are unavailable or insufficient to conduct the RPA for the pollutant, or if all reported detection limits of the pollutant in the effluent are greater than or equal to the WQO, the Regional Board shall require additional monitoring, in accordance with Section 1.3 of the SIP. Upon completion of the required monitoring, the Regional Board shall use the gathered data to conduct RPA and determine if new WQBELs are required.

Therefore these constituents require interim requirements. Section 2.4.5 of the SIP discusses how compliance will be determined in the case where the lowest detection level is higher than the WQ criteria. The Discharger should work with the laboratory to lower detection levels to meet applicable and reliable detection limits; follow procedures set forth in 40 CFR Part 136; and, report the status of their findings in the annual report. During the term of the permit, if and when monitoring with lowered detection limits shows any of the priority pollutants at levels exceeding the applicable WQOs, the Discharger will be required to initiate source identification and control for the particular pollutant. Appendix 4 of the SIP lists the minimum levels and laboratory techniques for each constituent.

A numerical limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. However, if the constituent had a limit in the previous permit, and if none of the Antibacksliding exceptions apply, then the limit will be retained. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

2. **RPA Data** - The RPA was based on effluent monitoring data for June 2003 through May 2006. Data collected prior to July 2003 was excluded from the data set, because it was not representative of the level of treatment provided by the upgraded treatment units at the Burbank WRP. Table R1 of the fact sheet summarizes the RPA, lists the constituents, and where available, the lowest, adjusted WQO, the MEC, the "Reasonable Potential" result, and the limits from the previous permit.
 - a. **Metals Water Quality Objective** - For metals, the lowest applicable WQO was expressed as total recoverable, and where applicable, adjusted for hardness. A spreadsheet (Table R3) was used to calculate the total recoverable CTR criteria. Hardness values from samples collected in the receiving water upstream of the discharge point are typically averaged and used to determine the appropriate CTR WQO

for those hardness-dependent metals. However, since the hardness upstream was much higher than both the effluent hardness and the hardness downstream of the discharge, the downstream hardness was used instead of the upstream hardness, in order to protect the downstream beneficial uses. The average hardness values at (R2) were used to determine the appropriate CTR WQO for hardness-dependent metals. Individual hardness values greater than 400 mg/L were capped at 400 prior to calculating the average hardness of 224 mg/L. This is consistent with the preamble to the CTR, contained in Federal Register Section E.f. *Hardness* (p.31692), 40 CFR Part 131.

- b. **Interim Monitoring Requirements** - In accordance with the SIP, the Regional Board may impose interim monitoring requirements upon the Discharger, so that the Discharger obtains adequate ambient, background water data for priority pollutants upstream of the discharge point as well as suitable effluent data. The Executive Officer directed the Discharger to begin an interim monitoring program for the duration of 18 months, beginning July 2001. The Discharger collected the eighteen required samples and reported the results quarterly to the Regional Board. However, since the data was collected prior to the NDN upgrade, it is not representative of the current level of treatment provided by the Burbank WRP. After additional information is gathered, Regional Board staff will conduct another RPA, at a future date, to determine if additional numeric limitations are necessary. Section 1.3, Step 8, of the SIP authorizes the Regional Board to use the gathered data to conduct RPA, as outlined in Steps 1 through 7, and determine if a water quality-based effluent limitation is required.

A reopener provision is included in this Order that allows the permit to be reopened to allow the inclusion of new numeric limitations for any constituent that exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives.

- C. The numeric limitations contained in this Order are intended to protect and maintain existing and potential beneficial uses of the receiving waters. Environmental benefits provided by these limitations are reasonable and necessary.
- D. Regional Board staff have determined that chromium VI, copper, mercury, selenium, zinc, dibromochloromethane, dichlorobromomethane, bis(2-ethylhexyl)phthalate, and lindane (gamma-BHC) showed the potential to exceed respective CTR objectives, and, therefore, require CTR-based effluent limitations. Regional Board staff have determined that the following pollutants showed the potential to exceed their respective Basin Plan

WQO, and, therefore, require Basin Plan-based effluent limitations: arsenic, bis(2-ethylhexyl)phthalate, iron, and total trihalomethanes. The following have effluent limitations based on the waste load allocations prescribed in the *LA River Metals TMDL*: cadmium and lead.

2. This Order is consistent with State and Federal antidegradation policies in that it does not authorize a change or relaxation in the manner or level of treatment. As a result, the quality of the discharge is expected to remain the same consistent with antidegradation policies. Although the quantity of wastewater is expected to increase, the City had an Environmental Impact Report prepared to identify and address any potential impacts. The accompanying monitoring and reporting program requires continued data collection and if monitoring data show a reasonable potential for a constituent to cause or contribute to an exceedance of water quality standards, the permit will be reopened to incorporate appropriate WQBELs. Such an approach ensures that the discharge will adequately protect water quality standards for potential and existing uses and conforms with antidegradation policies and antibacksliding provisions.

IX. PROPOSED EFFLUENT LIMITATIONS

1. Numeric toxic constituent limitations are based on the Basin Plan the narrative water quality objective for toxic constituents, “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life”; on the CTR; and, the interpretation of the Basin Plan narrative criteria using USEPA’s 304(a) nationally recommended water quality criteria. For toxic constituents that have no reasonable potential to cause or contribute to excursions of water quality objectives, no numerical limitations are prescribed.
2. Pursuant to 40 CFR 122.45(d)(2), for a POTWs continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations for POTWs. It is impracticable to only include average weekly and average monthly effluent limitations in the permit, because a single daily discharge of a pollutant, in excess amounts, can cause violations of water quality objectives. The effects of pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent limitations, as referenced in 40 CFR 122.45(d)(1), are included in the permit.
3. Furthermore, Section 1.4 of the SIP requires the step-by-step procedure to “adjust” or convert CTR numeric criteria into Average Monthly Effluent Limitations (AMELs) and Maximum Daily Effluent Limitations (MDELs), for toxics.
 - A. Step 3 of Section 1.4 of the SIP (page 8) lists the statistical equations that adjust CTR criteria for effluent variability.
 - B. Step 5 of Section 1.4 of the SIP (page 10) lists the statistical equations that adjust CTR criteria for averaging periods and exceedance frequencies of

the criteria/ objectives. This section also reads, "For this method only, maximum daily effluent limitations shall be used for publicly-owned treatment works (POTWs) in place of average weekly limitations.

4. Table R1 is the spreadsheet that staff used to calculate the AMELs and MDELs for priority pollutants.
5. 40 CFR section 122.45(f)(1) requires that except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR section 122.45(f)(2) allows the permit writer, at its discretion, to express limits in additional units (e.g., concentration units). The regulations mandate that, where limits are expressed in more than one unit, the permittee must comply with both.
6. Generally, mass-based limits ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, discourage the reduction in treatment efficiency during low-flow periods and require proper operation of the treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low-flow periods and still meet its mass-based limits. To account for this, this permit includes mass and concentration limits for some constituents.

A. Effluent Limitations:

1. Limits for Conventional and non-conventional pollutants:

Constituent	Units	Discharge Limitations		
		Monthly Ave. ^[1]	Weekly Ave. ^[2]	Daily Max. ^[2]
Settleable solids ^[5]	ml/L	0.1	--	0.3
Suspended solids ^[4]	mg/L	15	40	45
	lbs/day ^[3]	1,100	3,000	3,400
Oil and grease ^[6]	mg/L	10	--	15
	lbs/day ^[3]	750	--	1,100
BOD ₅ 20°C ^[4]	mg/L	20	30	45
	lbs/day ^[3]	1,500	2,300	3,400
Total residual chlorine ^[7]	mg/L	--	--	0.1 ^[8]
Total dissolved solids ^[9]	mg/L	950	--	--
	lbs/day ^[3]	71,000	--	--
Chloride ^[9]	mg/L	190	--	--
	lbs/day ^[3]	14,000	--	--
Sulfate ^[9]	mg/L	300	--	--
	lbs/day ^[3]	23,000	--	--
MBAS ^[11]	mg/L	0.5	--	--
	lbs/day ^[3]	40	--	--
Total inorganic nitrogen ^[12] (nitrate + nitrite as nitrogen)	mg/L	7.2 ^[15]	--	--
Nitrite-N (as N)	mg/L	0.9 ^[15]	--	--
Ammonia Nitrogen (NH ₃ -N) ^[13]	mg/L	2.1 ^[15]	--	9.1 ^[15]

- [1] The daily maximum effluent concentration limit shall apply to both flow weighted 24-hour composite samples and grab samples, as specified in the Monitoring and Reporting Program (Attachment T).
- [2] Average Monthly Discharge Limitation means the highest allowable average of daily discharge over a calendar month, calculated as the sum of all daily discharges measures during that month divided by the number of days on which monitoring was performed.
- Average Weekly Discharge Limitation means the highest allowable average of daily discharge over a calendar week, calculated as the sum of all daily discharges measures during that week divided by the number of days on which monitoring was performed.
- [3] The mass emission rates are based on the existing plant design flow rate of 9 mgd, and are calculated as follows: $\text{Flow(MDG)} \times \text{Concentration (mg/L)} \times 8.34 \text{ (conversion factor)} = \text{lbs/day}$. However, the design capacity will incrementally increase to 15 MGD, as the phased plant upgrade approaches completion. The mass-based effluent limitation will accordingly be modified upon certification and approval of increased treatment plant capacity. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.
- [4] See detailed information on suspended solids in the following Section IX.6.B.a.
- [5] See detailed information on settleable solids in the following Section IX.6.B.b.
- [6] See detailed information on oil and grease in the following Section IX.6.B.c.
- [7] See detailed information on total residual chlorine in the following Section IX.6.B.d.
- [8] For the determination of compliance with total residual chlorine limit, one of the following applies:
- Total residual chlorine concentration excursions of up to 0.3 mg/L, at the point in treatment train immediately following dechlorination, shall not be considered violations of this requirement provided the total duration of such excursions do not exceed 15 minutes during any calendar day. Peaks in excess of 0.3 mg/L lasting less than one minute shall not be considered a violation of this requirement; or
 - For continuous total residual chlorine recording devices that require greater than one minute to level off after the detection of a spike: if it can be demonstrated that a stoichiometrically appropriate amount of dechlorination chemical has been added to effectively dechlorinate the effluent to 0.1 mg/L or less, then the exceedance over one minute, but not for more than five minutes, will not be considered to be a violation.
- [9] See detailed information on TDS, chloride, and sulfate in the following Section IX.6.B.f.
- [10] See detailed information on iron in the following Section IX.6.B.g.
- [11] See detailed information on MBAS in the following Section IX.6.B.h.
- [12] See detailed information on nitrate plus nitrite as nitrogen in the following Section IX.6.B.i.
- [13] See detailed information on ammonia nitrogen in the following Section IX.6.B.j.
- [14] See detailed information on Manganese in the following Section IX.6.B.k.
- [15] This is the waste load allocation (WLA), according to the *Nitrogen Compounds TMDL* Resolution No. 2003-009, adopted by the Regional Board on July 10, 2003. The WLA serves as the effluent limitation for the discharge. It became effective on March 23, 2004, after the USEPA approves the *Nitrogen Compounds TMDL*, and after the Regional Board filed the Notice of Decision with the California Resources Agency. Note that the interim effluent limitations contained in the *Nitrogen Compounds TMDL* would not apply to the City's discharge, because construction and start-up operations of the NDN facilities have been completed.

B. Basis for Conventional and nonconventional pollutants:

a. Biochemical Oxygen Demand (BOD) and Suspended solids

Biochemical oxygen demand (BOD) is a measure of the quality of the organic matter in the water and, therefore, the water's potential for becoming depleted in dissolved oxygen. As organic degradation takes place, bacteria and other decomposers use the oxygen in the water for respiration. Unless there is a steady re-supply of oxygen to the system, the water will quickly become depleted of oxygen. Adequate dissolved oxygen levels are required to support aquatic life. Depressions of dissolved oxygen can lead to anaerobic conditions resulting in odors, or, in extreme cases, in fish kills.

40 CFR Part 133 describes the minimum level of effluent quality attainable by secondary treatment, for BOD and suspended solids, as:

- the monthly average shall not exceed 30 mg/L and
- the 7-day average shall not exceed 45 mg/L.

Burbank WRP provides tertiary treatment, as such, the limits in the permit are more stringent than secondary treatment requirements. The Plant achieves solids removal that are better than secondary-treated wastewater by adding a coagulant to enhance the precipitation of solids, and by filtering the effluent. Ferric chloride or Alum have been added in the past to enhance treatment.

The monthly average, the 7-day average, and the daily maximum limits cannot be removed because none of the antibacksliding exceptions under apply. Those limits were all included in the previous permits (Order Nos. 96-050 and 98-052) and the Burbank WRP has been able to meet all three limits (monthly average, the 7-day average, and the daily maximum), for both BOD and suspended solids.

In addition to having mass-based and concentration-based effluent limitations for BOD and suspended solids, the Burbank WRP also has a percent removal requirement for these two constituents. In accordance with 40 CFR section 133.102(a)(3) and 133.102(b)(3), the 30-day average percent removal shall not be less than 85 percent. Percent removal is defined as a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the 30-day average values of the raw wastewater influent pollutant concentrations to the facility and the 30-day average values of the effluent pollutant concentrations for a given time period.

b. Settleable solids

Excessive deposition of sediments can destroy spawning habitat, blanket benthic (bottom dwelling) organisms, and abrade the gills of larval fish. The limits for settleable solids are based on the Basin Plan (page 3-16) narrative, "Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses."

The numeric limits are empirically based on results obtained from the settleable solids 1-hour test, using an Imhoff cone.

It is impracticable to use a 7-day average limitation, because short-term spikes of settleable solid levels that would be permissible under a 7-day average scheme would not be adequately protective of all beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. The monthly average and daily maximum limits were both included in the previous permit (Order Nos. 96-050 and 98-052) and the Burbank WRP has been able to meet both limits.

c. Oil and grease

Oil and grease are not readily soluble in water and form a film on the water surface. Oily films can coat birds and aquatic organisms, impacting respiration and thermal regulation, and causing death. Oil and grease can also cause nuisance conditions (odors and taste), are aesthetically unpleasant, and can restrict a wide variety of beneficial uses. The limits for oil and grease are based on the Basin Plan (page 3-11) narrative, "Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses."

The numeric limits are empirically based on concentrations at which an oily sheen becomes visible in water. It is impracticable to use a 7-day average limitation, because spikes that occur under a 7-day average scheme could cause a visible oil sheen. A 7-day average scheme would not be sufficiently protective of beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. Both limits were included in the previous permits (Order Nos. 96-050 and 98-052) and the Burbank WRP has been able to meet both limits.

d. Residual chlorine

Disinfection of wastewaters with chlorine produces a chlorine residual. Chlorine and its reaction products are toxic to aquatic life. The limit for residual chlorine is based on the Basin Plan (page 3-9) narrative, "Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 mg/L and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses."

It is impracticable to use a 7-day average or a 30-day average limitation, because it is not as protective as of beneficial uses as a daily maximum limitation is. Chlorine is very toxic to aquatic life and short term exposures of chlorine may cause fish kills.

e. Fluoride

The existing permit effluent limitation of 2.0 mg/l for fluoride was developed based on the Basin Plan incorporation of Title 22, *Drinking*

Water Standards, by reference, for the protection of GWR. However, the fluoride limit was removed because one of the antibacksliding exceptions apply. New monitoring information and the TSD methodology was used to determine that there was no reasonable potential for the treated effluent to exceed the Basin Plan WQO.

f. *Total Dissolved Solids, Sulfate, Chloride, and Boron*

The limits for total dissolved solids, sulfate, and boron are based on Basin Plan Table 3-8 (page 3-13), for the Los Angeles River watershed, above Figueroa Street. TDS = 950 mg/L and Sulfate = 300 mg/L. There is no Boron WQO for that reach of the Los Angeles River. The Chloride limit is no longer 150 mg/L, but 190 mg/L, which resulted from Regional Board Resolution No. 97-02, *Amendment to the Water Quality Control Plan to incorporate a Policy for Addressing Levels of Chloride in Discharges of Wastewaters*. Resolution 97-02 was adopted by Regional Board on January 27, 1997; approved by SWRCB (Resolution 97-94); and, approved by OAL on January 8, 1998; and served to revise the chloride water quality objective in the Los Angeles River and other surface waters. It is practicable to express these limits as monthly averages, since they are not expected to cause acute effects on beneficial uses.

g. *Iron*

The existing permit effluent limitation of 300 mg/l for iron was developed based on the USEPA document, *Quality Criteria for Water 1986* [EPA 440/5-86-001, May 1, 1986], also referred to as the *Gold Book*, for the protection of GWR beneficial use. 300 µg/L is the secondary MCL for iron, however iron is not a priority pollutant. The previous permits (Order Nos. 96-050 and 98-052) included a final effluent daily maximum limitation for iron. Using the effluent monitoring information and the TSD methodology, the discharge has reasonable potential to exceed both the Gold Book criteria and the secondary MCL for iron. The limit was not deleted because none of the antibacksliding exceptions apply. However, the point of compliance was changed from surface water to groundwater, for the protection of the MUN beneficial use in the groundwater basins. In addition the limit was expressed as a monthly average rather than a daily maximum, because it was assumed that the groundwater basins have assimilative capacity for iron.

h. *Methylene Blue Activated Substances (MBAS)*

The MBAS procedure tests for the presence of anionic surfactants (detergents) in surface and ground waters. Surfactants disturb the water surface tension, which affects insects and can affect gills in aquatic life. The MBAS can also impart an unpleasant soapy taste to water, as well as cause scum and foaming in waters, which impact the aesthetic quality of both surface and ground waters.

Given the nature of the facility (a POTW) which accepts domestic wastewater into the sewer system and treatment plant, and the characteristics of the wastes discharged, the discharge has reasonable

potential to exceed both the numeric MBAS water quality objective (WQO) and the narrative WQO for prohibition of floating material such as foams and scums. Therefore an effluent limitation is required.

In past self-monitoring reports submitted to the Regional Board under MRP requirements, the Discharger has reported MBAS concentrations in the effluent in excess of 0.5 mg/L. The 0.5 mg/L concentration (which has been determined to be protective of beneficial uses and the aesthetic quality of waters), is based on the Department of Health Services' secondary drinking water standard, and on the Basin Plan WQO (p.3-11) which reads, "Waters shall not have MBAS concentrations greater than 0.5 mg/L in waters designated MUN." While the wastewater from this POTW is not directly discharged into a MUN designated surface water body, it will percolate into unlined reaches of the Los Angeles River [via ground water recharge designated beneficial use (GWR)] to ground water designated for MUN beneficial use. In addition, the Basin Plan states that "Ground water shall not contain taste or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses." Therefore, the secondary MCL should be the MBAS limit for this discharge to protect ground water recharge and the MUN use of the underlying ground water, while also protecting surface waters from exhibiting scum or foaming.

Since the Basin Plan objective is based on a secondary drinking water standard, it is practicable to have a monthly average limitation in the permit.

i. Total inorganic nitrogen ($\text{NO}_2 + \text{NO}_3$ as N)

Total inorganic nitrogen is the sum of Nitrate-nitrogen and Nitrite-nitrogen. Nitrogen is considered a nutrient. High nitrate levels in drinking water can cause health problems in humans. Infants are particularly sensitive and can develop methemoglobinemia (blue-baby syndrome). The nitrite-N limit of 1 mg/L is based on the Basin Plan WQO located on page 3-11.

1. **Algae.** Several reaches of the Los Angeles River are 303(d) listed for algae. Excessive growth of algae and/or other aquatic plants can degrade water quality. Algal blooms sometimes occur naturally, but they are often the result of excess nutrients (i.e., nitrogen, phosphorus) from waste discharges or nonpoint sources. These algal blooms can lead to problems with tastes, odors, color, and increased turbidity and can depress the dissolved oxygen content of the water, leading to fish kills. Floating algal scum and algal mats are also an aesthetically unpleasant nuisance.

The 303(d) listing for algae is being addressed by applying the narrative WQO for biostimulatory substances, "Waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses," and other relevant information to

arrive at a mass based-limit intended to be protective of the beneficial uses, pursuant to 40 CFR 122.44(d).

2. **Concentration-based limit.** The effluent limit for total inorganic nitrogen ($\text{NO}_2\text{-N} + \text{NO}_3\text{-N}$) of 7.2 mg/L is based on The Nutrient TMDL Waste Load Allocation, and supercedes the Basin Plan-based effluent limitation of 8 mg/L (found in Basin Plan Table 3-8, page 3-13, for the Los Angeles River watershed above Figueroa Street), because the TMDL is in effect. However, if the LA River is restored and the stream gets de-listed for nitrate plus nitrite nitrogen, then the Basin Plan-based effluent limit would apply.
3. **Mass based limit.** There is no mass emission rate for $\text{NO}_2\text{-N} + \text{NO}_3\text{-N}$ because the TMDL did not specify a mass-based WLA.

j. Ammonia-nitrogen

1. Ammonia is a pollutant routinely found in the wastewater effluent of POTWs, in landfill-leachate, as well as in run-off from agricultural fields where commercial fertilizers and animal manure are applied. Ammonia exists in two forms – un-ionized ammonia (NH_3) and the ammonium ion (NH_4^+). They are both toxic, but the neutral, un-ionized ammonia species (NH_3) is much more toxic, because it is able to diffuse across the epithelial membranes of aquatic organisms much more readily than the charged ammonium ion. The form of ammonia is primarily a function of pH, but it is also affected by temperature and other factors. Additional impacts can also occur as the oxidation of ammonia lowers the dissolved oxygen content of the water, further stressing aquatic organisms. Oxidation of ammonia to nitrate may lead to groundwater impacts in areas of recharge. [There is groundwater recharge in these reaches]. Ammonia also combines with chlorine (often both are present in POTW treated effluent discharges) to form chloramines – persistent toxic compounds that extend the effects of ammonia and chlorine downstream.
2. Ammonia is 303(d) listed in the Los Angeles River. Since ammonia has a WLA in the LA River Nutrient TMDL, a TMDL-based effluent limitation for total ammonia as nitrogen is required in order to implement the provisions of the TMDL and to try and restore the water quality in that section of the receiving water.
3. The 1994 Basin Plan contained water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board, with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (including enclosed bays, estuaries and wetlands) with Beneficial Use designations for protection of Aquatic Life.*

Resolution No. 2002-011 was approved by the State Board, the Office of Administrative Law, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively, and is now in effect. The final effluent limitations for ammonia prescribed in this Order are based on the LA River Nutrient TMDL. However, if the LA River is restored and the stream gets de-listed for ammonia, then the permit would be re-opened to include Basin Plan-based effluent limits for ammonia. (The revised Ammonia Tables would then apply.)

k. Manganese

The existing permit effluent limitation of 0.05 mg/L (or 50 µg/L) for manganese was developed based on the USEPA document, *Quality Criteria for Water 1986* [EPA 440/5-86-001, May 1, 1986], also referred to as the *Gold Book*, for the protection of GWR beneficial use. The 50 µg/L criteria was originally contained in USEPA's *Red Book*, which preceeded the *Gold Book*. 50 µg/L is also the secondary MCL for manganese. The Manganese criteria is not based on toxic effects, but is intended to minimize objectionable qualities such as laundry stains and objectionable tastes in beverages. Manganese is not on USEPA's list of priority pollutants. The previous permits (Order Nos. 96-050 and 98-052) included a final effluent limitation for manganese, expressed as a daily maximum. The limit was deleted because one of the antibacksliding exceptions applies. New effluent monitoring information and the TSD methodology was used to determine that there was no reasonable potential to exceed neither the Gold Book criteria nor the secondary MCL for manganese.

l. Coliform/Bacteria

Total and fecal coliform bacteria are used to indicate the likelihood of pathogenic bacteria in surface waters. Given the nature of the facility, a wastewater treatment plant, pathogens are likely to be present in the effluent in cases where the disinfection process is not operating adequately. As such, the permit contains the following:

1. Effluent Limitations:

- a. The 7 day median number of coliform organisms at some point in the treatment process must not exceed 2.2 Most Probable Number (MPN) per 100 milliliters, and
- b. The number of coliform organisms must not exceed 23 MPN per 100 milliliters in more than one sample within any 30-day period.

These disinfection-based effluent limitations for coliform are for human health protection and are consistent with requirements established by the Department of Health Services. These limits for coliform must be met at the point of the treatment train immediately

following disinfection, as a measure of the effectiveness of the disinfection process.

2. Receiving Water Limitation

a. Geometric Mean Limits

- * E.coli density shall not exceed 126/100 mL.
- * Fecal coliform density shall not exceed 200/100 mL.

b. Single Sample Limits

- * E.coli density shall not exceed 235/100 mL.
- * Fecal coliform density shall not exceed 400/100 mL.

These receiving water limitations are based on Resolution No. 01-018, Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Bacteria Objectives for Water Bodies Designated for Water Contact Recreation, adopted by the Regional Board on October 25, 2001. The Resolution was approved by State Board, OAL, and USEPA, on July 18, 2002, September 19, 2002, and September 25, 2002, respectively.

m. pH

The hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. While the pH of "pure" water at 25°C is 7.0, the pH of natural waters is usually slightly basic due to the solubility of carbon dioxide from the atmosphere. Minor changes from natural conditions can harm aquatic life. The effluent limitation for pH which reads, "the wastes discharged shall at all times be within the range of 6.5 to 8.5," is taken from the Basin Plan (page 3-15) which reads "the pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharge."

n. Turbidity

Turbidity is an expression of the optical property that causes light to be scattered in water due to particulate matter such as clay, silt, organic matter, and microscopic organisms. Turbidity can result in a variety of water quality impairments. The effluent limitation for turbidity which reads, "For the protection of the water contact recreation beneficial use, the wastes discharged to water courses shall have received adequate treatment, so that the turbidity of the wastewater does not exceed: (a) a daily average of 2 Nephelometric turbidity units (NTUs); and (b) 5 NTUs more than 5 percent of the time (72 minutes) during any 24 hour period," is based on the Basin Plan (page 3-17).

o. Radioactivity

Radioactive substances are generally present in natural waters in extremely low concentrations. Mining or industrial activities increase the

amount of radioactive substances in waters to levels that are harmful to aquatic life, wildlife, or humans. The existing permit contains the following effluent limitation for radioactivity: "Radioactivity of the wastes discharged shall not exceed the limits specified in Title 22, Chapter 15, Article 5, Section 64443, of the California Code of Regulations, or subsequent revisions." The limit is based on the Basin Plan incorporation of Title 22, *Drinking Water Standards*, by reference, to protect beneficial uses. Therefore, the accompanying Order will retain the limit for radioactivity.

C. Toxicity.

Ambient monitoring data indicates that the background concentration in the Burbank Western Wash and in the lower Los Angeles River is toxic to aquatic organisms, and therefore exceeds water quality standards. Final effluent water quality data, contained in the Discharger's monitoring reports, also shows that chronic toxicity in the effluent has exceeded 1TUc (EPA WQO) several times. Therefore, pursuant to the TSD, reasonable potential exists for toxicity. As such, the permit should contain a numeric effluent limitation for toxicity.

The following support the inclusion of toxicity numeric effluent limitations for chronic toxicity:

- a. 40 CFR 122.2 (Definition of Effluent Limitation);
- b. 40 CFR 122.44(d)(v) – limits on whole effluent toxicity are necessary when chemical-specific limits are not sufficient to attain and maintain applicable numeric or narrative water quality standards;
- c. 40 CFR 122.44(d)(vi)(A) – where a State has not developed a water quality criterion for a specific pollutant that is present in the effluent and has reasonable potential, the permitting authority can establish effluent limits using numeric water quality criterion;
- d. Basin Plan objectives and implementation provisions for toxicity;
- e. Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;
- f. Whole Effluent Toxicity (WET) Control Policy July 1994; and,
- g. Technical Support Document (several chapters and Appendix B).

However, the circumstances warranting a numeric chronic toxicity effluent limitation when there is reasonable potential were reviewed by the State Water Resources Control Board (State Board) in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. On September 17, 2003, at a public hearing, the State Board decided to defer the issue of numeric chronic toxicity effluent limitations until a subsequent version of the SIP is adopted. In the mean time, the State Board replaced the numeric chronic

toxicity limit with a narrative effluent limitation and a 1 TU_c trigger, in the Long Beach and Los Coyotes WRP NPDES permits. This permit contains a similar chronic toxicity effluent limitation. This Order also contains a reopener to allow the Regional Board to modify the permit, if necessary, consistent with any new policy, law, or regulation.

Acute Toxicity Limitation:

The Dischargers may test for Acute toxicity by using USEPA's *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, October 2002 (EPA-821-R-02-012). Acute toxicity provisions in the accompanying Order are derived from the Basin Plan's toxicity standards (Basin Plan 3-16 and 3-17). The provisions require the Discharger to accelerate acute toxicity monitoring and take further actions to identify the source of toxicity and to reduce acute toxicity.

Chronic Toxicity Limitation and Requirements:

Chronic toxicity provisions in the accompanying Order are derived from the Basin Plan's toxicity standards (Basin Plan 3-16 and 3-17). The provisions require the Discharger to accelerate chronic toxicity monitoring and take further actions to identify the source of toxicity and to reduce chronic toxicity. The monthly median trigger of 1.0 TU_c for chronic toxicity is based on *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, page 2-8). In cases where effluent receives no dilution or where mixing zones are not allowed, the 1.0 TU_c chronic criterion should be expressed as a monthly median. The “median” is defined as the middle value in a distribution, above which and below which lie an equal number of values. For example, if the results of the WET testing for a month were 1.5, 1.0, and 1.0 TU_c, the median would be 1.0 TU_c.

The *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, page 2-8) recommends two alternatives: using 2.0 TU_c as the maximum daily limit; or using a statistical approach to develop a maximum daily effluent limitation.

- D. Final Limits for priority pollutants discharged through Discharge Serial No. 002, to the Burbank Western Wash, tributary to the Los Angeles River:

CTR # ^[1]	Constituent	Units	Discharge Limitations	
			Monthly Average	Daily Maximum
4	Cadmium ^[2]	µg/L	4.5 ^[6 & 8]	---
		kg/day ^[3]	0.15 ^[6 & 8]	---
5b	Chromium VI ^[2]	µg/L	9.7 ^{[a], [5]}	16 ^{[a], [5]}
		lbs/day ^[4]	0.73 ^[6]	1.2 ^[5]
6	Copper ^[2]	µg/L	16 ^{[a], [5]}	30 ^{[a], [5]}
		lbs/day ^[4]	1.2 ^[5]	2.6 ^[5]

CTR # ^[1]	Constituent	Units	Discharge Limitations	
			Monthly Average	Daily Maximum
7	Lead ^[2]	µg/L	9.1 ^[6, 7, & 8]	--
		kg/day ^[3]	0.31 ^[6, 7, & 8]	--
8	Mercury ^[2]	µg/L	0.051 ^{[4 & 5], [6]}	0.10 ^{[4 & 5], [6]}
		lbs/day ^[3]	0.004 ^{[4 & 5], [6]}	0.008 ^{[4 & 5], [6]}
10	Selenium ^[2]	µg/L	4.2 ^{[a], [5]}	7.8 ^{[a], [5]}
		lbs/day ^[3]	0.32 ^[5]	0.59 ^[5]
13	Zinc ^[2]	µg/L	178 ^{[a], [5]}	236 ^{[a], [5]}
		lbs/day ^[3]	13 ^[5]	18 ^[5]
23	Dibromochloromethane	µg/L	34 ^{[5], [6]}	45 ^{[5], [6]}
		lbs/day ^[3]	2.6 ^[5]	3.4 ^[5]
27	Dichlorobromomethane	µg/L	46 ^{[5], [6]}	61 ^{[5], [6]}
		lbs/day ^[3]	3.5 ^[5]	4.6 ^[5]
68	Bis(2-Ethylhexyl)phthalate	µg/L	5.9 ^{[b], [5]}	17 ^{[b], [5]}
		lbs/day ^[3]	0.44 ^[5]	1.3 ^[5]
105	Lindane (Gamma-BHC)	µg/L	0.063 ^{[4 & 5], [6]}	0.13 ^{[4 & 5], [6]}
		lbs/day ^[3]	0.0047 ^[6]	0.0098 ^[6]

[1] This number corresponds to the compound number found in Table 1 of CTR. It is simply the order in which the 126 priority pollutants were listed 40 CFR part 131.38 (b)(1).

[2] Concentration expressed as total recoverable.

[3] The mass emission rates are based on the existing plant design flow rate of 9 mgd, and are calculated as follows: Flow(MDG) x Concentration (mg/L) x 8.34 (conversion factor) = lbs/day. However, the design capacity will incrementally increase to 15 MGD, as the phased plant upgrade approaches completion. The mass-based effluent limitation will accordingly be modified upon certification and approval of increased treatment plant capacity. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.

[4] For priority pollutants, Section 2.4.5 of CTR *Compliance Determination*, reads, "Dischargers shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML."

[5] This effluent limitation will not be in effect until May 17, 2010, and until that time the Discharger shall comply with the interim limits established in Section I.A.(9) of the accompanying NPDES Order No. R4-2006-0XXX.

[6] This is the **wet weather** waste load allocation (WLA), according to Resolution No. R05-006, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Metals for the Los Angeles River and its Tributaries (LA River Metals TMDL)*, adopted by the Regional Board on June 2, 2005. The Metals TMDL was approved by the State Board, with the adoption of Resolution No. 2005-0077. On December 9, 2005 and December 22, 2005, respectively, OAL and USEPA approved the *LA River Metals TMDL*. It went into effect on January 11, 2006.

[7] This is the **dry weather** waste load allocation (WLA), according to Resolution No. R05-006, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Metals for the Los Angeles River and its Tributaries (LA River Metals TMDL)*, adopted by the Regional Board on June 2, 2005. The Metals TMDL was approved by the State Board, with the adoption of Resolution No. 2005-0077. The WLAs will ultimately serve as the effluent limitation for the discharge. This limit becomes effective after the USEPA approves the *Los Angeles River and Tributaries Metals TMDL* and after the Regional Board files the Notice of Decision with the California Resources Agency. If U.S. EPA does not approve the *Los Angeles River and Tributaries Metals TMDL*, this effluent limitation will not apply.

[8] This effluent limitation will not be in effect until January 11, 2011, five years after the Metals TMDL effective date, according to the LA River Metals TMDL Implementation Section.

[a] Based on most stringent CTR criteria [Criterion Continuous Concentration (CCC)] for the protection of freshwater aquatic life. To arrive at this calculated limitation, the CTR CCC was adjusted, according to SIP Section 1.4.

Federal Register Vol. 65, No. 97, page 31689, discusses the basis for the aquatic life criteria in the CTR. The Criterion Maximum Concentration (CMC), a short term concentration limit, and the Criterion Continuous Concentration (CCC), a four day concentration limit, are designed to provide protection of aquatic life and its uses from acute and chronic toxicity to animals and plants. The criteria are intended to identify average pollutant concentrations which will produce water quality generally suited to maintenance of aquatic life and designated uses while restricting the duration of excursions over the average so that total exposures will not cause unacceptable adverse effects.

Federal Register Vol. 65, No. 97, page 31691, discusses how CCC is intended to be the highest concentration that could be maintained indefinitely in a water body without causing an unacceptable effect on aquatic community or its uses.

[b] Based on most stringent CTR criteria for the protection of human health from consumption of organisms only. CTR criteria was adjusted according to SIP Section 1.4, to arrive at this calculated limitation.

E. Basis for priority pollutants:

Mixing zones, dilution credits, and attenuation factors are not used in the accompanying Order and would be inappropriate to grant, at this time, in light of the factors discussed in Section VII.19 through I of this Fact Sheet.

Allowance of a mixing zone is in the Regional Board's discretion under Section 1.4.2 of the SIP and under the Basin Plan (Basin Plan Chapter 4, page 30). If the Discharger subsequently conducts appropriate mixing zone and dilution credit studies, the Regional Board can evaluate the propriety of granting a mixing zone or establishing dilution credits.

F. Example calculation of a CTR-based limit: Lindane (Gamma-BHC):

Is a limit required? What is RPA?

- From Table R, *Reasonable Potential & Limit Derivation*, we determined that Reasonable potential analysis (RPA) = Yes, therefore a limit is required.

Step 1 – Identify applicable water quality criteria.

From California Toxics Rule (CTR), we can obtain the Criterion Maximum Concentration (CMC) and the Criterion Continuous Concentration (CCC).

Freshwater Aquatic Life Criteria:

CMC = 0.95 (CTR page 31715, column B1) and

CCC = None available; and

Human Health Criteria for Organisms only = 0.063 µg/L.

Step 2 – Calculate effluent concentration allowance (ECA)

ECA = Criteria in CTR, since no dilution is allowed.

Step 3 – Determine long-term average (LTA) discharge condition

- a. Calculate CV:
$$CV = \text{Standard Deviation} / \text{Mean}$$
$$= 0.6$$
- b. Find the ECA Multipliers from SIP Table 1 (page 7), or by calculating them using equations on SIP page 6. When CV = 0.6, then:
ECA Multiplier acute = 0.321 and
ECA Multiplier chronic = 0.527.
- c.
$$\text{LTA acute} = \text{ECA acute} \times \text{ECA Multiplier acute}$$
$$= 0.95 \mu\text{g/L} \times 0.321 = 0.30495 \mu\text{g/L}$$
- d.
$$\text{LTA chronic} = \text{ECA chronic} \times \text{ECA Multiplier chronic}$$
$$= \text{none available}$$

Step 4 – Select the lowest LTA.

In this case, LTA chronic < LTA acute, therefore lowest LTA = 0.305 $\mu\text{g/L}$

Step 5 – Calculate the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for AQUATIC LIFE.

- a. Find the multipliers. You need to know CV and n (frequency of sample collection per month). If effluent samples are collected 4 times a month or less, then n = 4. CV was determined to be 0.6 in a previous step.
AMEL Multiplier = 1.55
MDEL Multiplier = 3.11
- b.
$$\text{AMEL aquatic life} = \text{lowest LTA (from Step 4)} \times \text{AMEL Multiplier}$$
$$= 0.305 \mu\text{g/L} \times 1.55 = 0.47275 \mu\text{g/L}$$
- c.
$$\text{MDEL aquatic life} = \text{lowest LTA (from Step 4)} \times \text{AMEL Multiplier}$$
$$= 0.305 \mu\text{g/L} \times 3.11 = 0.9486 \mu\text{g/L}$$

Step 6 – Find the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for HUMAN HEALTH.

- a. Find factors. Given CV = 0.6 and n = 4.
For AMEL human health limit, there is no factor.
The MDEL/AMEL human health factor = 2.01
- b.
$$\text{AMEL human health} = \text{ECA} = 0.063 \mu\text{g/L}$$
- c.
$$\text{MDEL human health} = \text{ECA} \times \text{MDEL/AMEL factor}$$
$$= 0.063 \mu\text{g/L} \times 2.01 = 0.13$$

Step 7 – Compare the AMELs for Aquatic life and Human health and select the lowest. Compare the MDELs for Aquatic life and Human health and select the lowest.

- a. Lowest AMEL = 0.063 $\mu\text{g/L}$ (Based on Human Health protection)

b. Lowest MDEL = 0.13 µg/L (Based on Human Health protection)

- G. A numerical limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants which have no available numeric criteria.
- H. The numeric limitations contained in the accompanying Order were derived using best professional judgement and are based on applicable state and federal authorities, and as they are met, will be in conformance with the goals of the aforementioned water quality control plans, and water quality criteria; and will protect and maintain the designated existing and potential beneficial uses of the receiving waters.

X. Receiving Water Limitations for Groundwater

1. Groundwaters shall not exceed the following MCL-based limitations, as a result of wastes discharged:

Constituent	Units	Discharge Limitations	
		Monthly Average	Daily Maximum
Arsenic	µg/L	10	--
Bis(2-ethylhexyl)phthalate	µg/L	4	--
Total Trihalomethanes*	µg/L	80	--
Iron	µg/L	300	--

* Total trihalomethanes is the sum of concentrations of the trihalomethane compounds: bromodichloromethane, bromoform, chloroform, and dibromochloromethane.

2. The prior NPDES permit contained effluent limits for these constituents expressed as daily maximum, which had to be met at the end of pipe. Reasonable potential analysis was conducted using new data and the TSD methodology. The analysis showed that the discharge had reasonable potential to exceed the MCLs for the constituents listed in the above table, therefore a limit is included in the permit. However, the point of compliance was changed from surface water to groundwater for these four MCL-based limits, given the conditionally designated p*MUN beneficial use for the Burbank Western Channel, the need to protect the groundwater recharge (GWR) beneficial use in the surface waters, and the MUN beneficial use in the groundwater basins. In addition, the limit was expressed as a monthly average rather than a daily maximum, because it was assumed that the groundwater basins have assimilative capacity for these pollutants. The monthly averaging period is justified because these pollutants are not expected to produce acute effects.
3. According to Section 13241 of the CWC, the factors to be considered by a regional board in establishing water quality objectives include, but are not necessarily be limited to, all of the following:
- (a) Past, present, and probable future beneficial uses of water.

- (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.
- (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.
- (d) Economic considerations.
- (e) The need for developing housing within the region.
- (f) The need to develop and use recycled water.

Regional Board staff have considered all of the above factors.

- (a) The proposed Order is protective of all beneficial uses of surface waters (using CWA) and ground water (using CWC);
- (b) The environmental characteristics of the discharge and of the watershed in which the facility is located have been taken into consideration and provisions of the applicable TMDLs have been incorporated into the Order, in an attempt to restore waters under section 303(d) of the CWA;
- (c) Limitations which could reasonably be achieved have been placed in the Order to protect the water quality of the immediate receiving waters and those located downstream of the discharge point;
- (d) Economic considerations have also been considered
 1. **DHS' Economic Analysis.** As discussed in Section VI.8 of this Fact Sheet, the technical and economic feasibility of regulating MCLs is evaluated as part of the MCL development and adoption process by the California Department of Health Services, a sister agency. The technical feasibility includes an evaluation of commercial laboratories' ability to analyze for and detect the chemical in drinking water, the costs of monitoring, and the costs of treatment required to remove it.
 2. **Requirements under WDR Order No. 91-101.** The City of Burbank is currently required to comply with the Maximum Contaminant Levels of the current California Drinking Water Standards for inorganic and organic chemicals, under section A.5. of Order No. 91-101, which are separate waste discharge requirements for water recycling. Since the Burbank WRP is already required to meet the MCLs in order to serve the recycled water, no additional treatment units are believed to be necessary in order to meet the limitations in the accompanying NPDES permit.
 3. **Similar Facilities.** Other POTWs in Region 4 have similar NPDES permit requirements. When Regional Board staff was preparing the first set of permits that would implement the SIP and the CTR, they asked the State Board, Division of Water Quality's Standard Development Section to prepare an economic analysis of the cost of complying with the California Toxics Rule for the five Los Angeles County Sanitation District (LACSD) inland POTWs in the San Gabriel River Watershed. The State Board contracted Sciences Applications International Corporation (SAIC) to prepare the economic analysis. Their report titled, *Potential Costs of Complying with the California Toxics Rule for Five Los Angeles County*

Sanitation District Facilities (March 21, 2001), presented a worst case scenario and a most likely control scenario for all five facilities. Of the five LACSD POTWs, the Pomona WRP, with a 15 MGD capacity, is the one which is most similar to the Burbank WRP. For the Pomona WRP, the worst case control scenario would require the use of Granular Activated Carbon (GAC), with a construction cost of about \$12 Million, and an operation costs of \$387,000 per year. The most likely control scenario required implementation of a source control or pollutant minimization program, a plant study for process optimization, and an improved coagulant chemical addition process, at a cost of \$141,000 per year. Although the focus of the study was to consider CTR-based limits, the study did include consideration of the 4 µg/L MCL-based limit for Bis(2-ethylhexyl)phthalate. The LACSD plants have focused on source control and pollution prevention, process optimization, and cleaner laboratory analytical techniques to achieve compliance with their permit limitations. In the case of Bis(2-ethylhexyl)phthalate, using cleaner sampling techniques has made a big difference in eliminating the amounts of detects (or false positives) obtained. The clean hands technique involved using gloves and bottles that were free of phthalates, for example using teflon and glassware. In no case did any of the LACSD POTWs have to install costly treatment systems for the removal of CTR-based or MCL-based pollutants.

Regional Board staff conclude that additional treatment units would not be required to meet the new limitations contained in the accompanying Order. The City of Burbank may conduct an economic analysis and submit it to the Regional Board for consideration, during the public comment period, if so desired.

- (e) As a mature built-out city, we are not aware of any significant need for developing housing in the City of Burbank. This permitting action includes a plant capacity expansion to 15 MGD. This expansion was requested by the City of Burbank to accommodate future anticipated growth by the City;;
- (f) The Burbank WRP already recycles large quantities of treated effluent for irrigation and industrial purposes every year. Section III.7. of this Fact Sheet discusses the recycled water facility. Burbank continuously searches for new customers to serve them recycled water.

XI. INTERIM REQUIREMENTS

1. Pollutant Minimization Program

- A. The accompanying Order provides for the use of Pollutant Minimization Program, developed in conformance with Section 2.4.5.1 of the SIP, when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods included in the permit in accordance with sections 2.4.2 or 2.4.3 above, presence of whole effluent toxicity, health advisories for fish

consumption, results of benthic or aquatic organisms tissue sampling) that a priority pollutant is present in the discharger's effluent above an effluent limitation.

- B. The Discharger shall develop a Pollutant Minimization Program (PMP), in accordance with Section 2.4.5.1., of the SIP, if all of the following conditions are true, and shall submit the PMP to the Regional Board within 120 days of determining the conditions are true:
 - a. when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:
 - i. A sample result is reported as detected but not quantified (DNQ) and the effluent limitation is less than the reported ML; or
 - ii. A sample result is reported as nondetect (ND) and the effluent limitation is less than the MDL.
 - b. Examples of evidence that the priority pollutant is present in the effluent above an effluent limitation are:
 - i. sample results reported as DNQ when the effluent limitation is less than the method detection limit (MDL);
 - ii. sample results from analytical methods more sensitive than those methods included in the permit in accordance with Sections 2.4.2 or 2.4.3;
 - iii. presence of whole effluent toxicity;
 - iv. health advisories for fish consumption; or,
 - v. results of benthic or aquatic organism tissue sampling.
- C. The goal of the PMP is to reduce all potential sources of a priority pollutant(s) through pollution minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the WQBEL.
- D. The Discharger shall propose a plan with a logical sequence of actions to achieve full compliance with the limits in this Order. The first phase of the plan is to investigate the sources of the high levels of contaminants in the collection system. If the sources can be identified, source reduction measures (including, when appropriate, Pollution Minimization Plans) will be instituted. At the time this Order is considered, the Discharger is unsure whether or not all sources contributing to the high contaminant levels can be identified. Therefore, a parallel effort will be made to evaluate the appropriateness of Site Specific Objectives (SSO) and, where appropriate, Use Attainability Analyses (UAA), and modifications to and/or construction of treatment facilities. If it is determined that a SSO or UAA is necessary and appropriate, the Discharger will submit a written request for a SSO

study, accompanied by a preliminary commitment to fund the study, to the Regional Board. The Discharger will then develop a workplan and submit it to the Regional Board for approval prior to the initiation of the studies.

2. Interim Limits

- A. The Burbank WRP may not be able to achieve immediate compliance with the CTR-based final effluent limitations for chromium VI, copper, mercury, selenium, zinc, bis(2-ethylhexyl)phthalate, dibromochloromethane, bichlorobromomethane, and lindane (gamma-BHC), contained in the accompanying Order Section I.A.2.b. The Burbank WRP may also not be able to achieve immediate compliance with the MCL-based groundwater limitations for: bis(2-ethylhexyl)phthalate and total trihalomethanes, contained in the accompanying Order Section I.C. Data submitted in previous self-monitoring reports was used to conduct a reasonable potential analysis. The results showed that these constituents had reasonable potential to exceed the criteria necessary to protect the designated beneficial uses of the receiving waters. Even though the maximum detected effluent values for arsenic and iron did not exceed the applicable MCL, new MCL-based receiving water groundwater limits for arsenic and iron are included in the accompanying Order, because the reasonable potential analysis indicated that the discharge could contribute to an exceedance of the MCLs. Since the discharge is not expected to consistently exceed the limitations, interim limits for arsenic and iron are not proposed in the accompanying Time Schedule Order, R4-2006-YYYY.
- B. 40 CFR, Section 131.38(e) provides conditions under which interim effluent limits and compliance schedules may be issued. However, until recently, the Basin Plan did not allow inclusion of interim limits and compliance schedules in NPDES permits for effluent limits.
 - 1. With the Regional Board adoption and USEPA approval of Resolution No. 2003-001, compliance schedules can be allowed in NPDES permits if:
 - a. the effluent limit implements new, revised, or newly interpreted water quality standards, or
 - b. the effluent limit implements TMDLs for new, revised or newly interpreted water quality standards.

However, the provisions under Resolution No. 2003-001 do not apply to any constituent with a final effluent limitation.

- 2. The SIP allows inclusion of interim limits in NPDES permits for CTR-based priority pollutants. The CTR provides for a five-year maximum compliance schedule, while the SIP allows for longer, TMDL-based compliance schedule. However, the USEPA has yet to approve the longer compliance schedules. Therefore, this Order includes interim limits and compliance schedules for CTR-based priority pollutant limits, up until May 17, 2010, when the Discharger has been determined to have problems in meeting the new limits. This Order also includes a reopener to allow the Regional

Board to grant TMDL-based compliance schedules if the USEPA approves the longer compliance schedule provisions of the SIP.

3. For MCL-based limits, such as: bis(2-ethylhexyl)phthalate and total trihalomethanes, prescribed in this Order, for which the Discharger will not be able to meet immediately, interim limits and compliance dates are provided in an accompanying Time Schedule Order R4-2006-YYYY.
- C. The Discharger already has in place a source control and pollutant minimization approach through its existing pollutant minimization strategies and through the pretreatment program. The duration of interim requirements established in this Order was developed in coordination with Regional Board staff and the Discharger, and the proposed schedule is as short as practicable. The four-year compliance schedule is based on the maximum allowable compliance schedule.